THE

NAUTICAL ALMANAC

AND

ASTRONOMICAL EPHEMERIS

FOR THE YEAR

1823.

PUBLISHED BY ORDER OF THE

COMMISSIONERS OF LONGITUDE.

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ADVERTISEMENT.

In continuing the annual publication of the Nautical Almanac, the Board of Longitude has been more anxious to attain the highest possible degree of accuracy in the execution of those computations, which have hitherto been considered as requisite for the purposes of navigation, than to add very materially to their number or extent. It has, however, been thought proper to annex to the Almanac a correct Table of Refractions, a Table of Second Differences, and the true or apparent Places of Twenty Four Principal Fixed Stars, for every ten days of the year, corrected for precession, aberration, and nutation.

The Table of Refractions is computed by a very simple formula, derived originally from theory, and adapted to the results of the most accurate observations, which have been found to justify the slight deviation from the French Tables, that it exhibits in the mean value of the refraction. The barometrical and thermometrical corrections are a little more at variance with the common mode of computation, and they approach in some degree, for the lower altitudes, to the rules which Bradley had inferred from observation alone. The places of the stars have been principally calculated from Dr. Maskelyne's Tables; a second table has been added for facilitating the extension of a similar computation to some others of the most useful stars.

The Tables of the Planetary Motions, which have been employed, are chiefly those which are printed in the third volume of Professor Vince's Astronomy, with the omission only of some equations which do not materially affect the results: the place of the Moon has been calculated, since the beginning of 1821, from Burckhardt's Tables, which are of a later date:

and it is intended to adopt the new Tables of Delambre for the Eclipses of Jupiter's Satellites, beginning with 1824. For the configurations, Halley's Tables have been hitherto employed: and they appear, with proper corrections of the epochs, to be sufficiently accurate for the purpose.

The Moon's Right Ascension and Declination are now computed to seconds, for the more convenient observation of the Moon's place on shore, and for the calculation of occultations and many other purposes. At the suggestion of a very distinguished practical navigator, the differences of the Sun's Declination from day to day have been added, for the convenience of seamen. Whether any advantage would be gained from the insertion of the Moon's distance from Jupiter, must depend on the precision of the tables of that planet; a point which is expected to be very shortly determined from the most accurate observations.

The attention of the Board has been particularly directed to the determination of the conditions, under which rewards are to be proposed for the improvement of Astronomical Tables and of Timekeepers; but all who are acquainted with the present state of this department of science must be aware, that a considerable time will be required, before it will be practicable to ascertain, with sufficient precision, how much has actually been effected, and how much is still required, with respect to both these objects. In the mean time it must be remembered, that the Board possesses ample powers to reward any improvement, which they may judge sufficiently important, either in the theory or in the practice of any part of Navigation or Nautical Astronomy. The remuneration of any discovery, which may be made in the Arctic Seas, being more a matter of discretion, it was easier to come to an immediate conclusion on this subject; and the decision of the Board with respect to it has been confirmed by an Order in Council, which is printed in this volume.

EXTRACT FROM

DR. MASKELYNE'S PREFACE.

"MAYER's last Manuscript Tables of the Sun and Moon, and his curious and elaborate Theory of the Moon, were received by the Board of Longitude, after his decease, for which his Widow received a Reward of Three Thousand Pounds, by Act of Parliament; and the celebrated Mr. LEONARD EULER the Sum of Three Hundred Pounds, for having furnished the Theorems made Use of by Mr. MAYER in his Theory. Both the Tables and Theory were printed under my Inspection, and published in 1770.

"MAYER's Tables of the Sun were used in the Computations of the NAUTICAL ALMANAC, from its first beginning in 1767 to that of 1804, inclusive. From the NAUTICAL ALMANAC of 1767 to that of 1776, both inclusive, or the first ten Years, MAYER's Lunar Tables were made use of. But from the NAUTICAL ALMANAC of 1777 to that of 1788, both inclusive, or the next twelve Years, the Moon's Place was inserted as calculated from new Tables, improved from MAYER's Tables, composed by the late Mr. CHARLES MASON, under my direction, from Calculations made by Order of the Board of Longitude upon the Series of Lunar Observations made by the late Dr. BRADLEY, and published in the NAUTICAL ALMANAC of 1774; in which new Tables the Epoch of the Moon's mean Longitude is 1″ less, that of the Apogee is 56″ less, and that of the ascending Node 45″ more than in MAYER's printed Tables, and the Equations are calculated to tenths of a second; and moreover one new Equation is introduced, whose argument is the mean Distance of the Moon from the Sun's Apogee, and maximum is 16″,4. But from the NAUTICAL ALMANAC of 1789 to that of 1804, both inclusive, the Moon's Place was inserted as calculated from new Tables still farther corrected by Mr. MASON, entitled by him, TABLES of 1780, as having been completed about that Time, being rendered more exact than the former by the Addition of eight Equations to the Number in MAYER's Tables, taken from MAYER's Theory as to the Arguments, but settled as to the *Maxima*, from the said Observations, and the whole being calculated to Tenths of a Second. However the 18th Equation of these Tables was not used, as it was doubtful whether such an Equation should arise from the Theory of Gravity. Moreover the Epochs of the Sun's Longitude in MAYER's Tables, and of the Moon's Longitude and mean

anomaly contained in MASON's Tables of 1780, were diminished at the rate of 10″ in a hundred Years, reckoned from the year 1756, in the Calculations of the NAUTICAL ALMANACS from 1797 to 1804, both inclusive. Also the Longitudes of the Stars, used in computing their distances from the Moon, were carried on from Dr. BRADLEY's Catalogue of the year 1760, by subtracting 50″,35 from it, for each year between 1756 and 1760; to reduce that Catalogue back to the beginning of 1756, and then adding at the rate of 50″,20 for the Precession of the Equinoxes, for each year elapsed after 1756, and applying the Correction of Secular Motion derived from the 44th of the folio Tables annexed to the First Volume of my Astronomical Observations.

"The Distances of the Stars from the Moon had been computed, till the end of the EPHEMERIS of 1802, from a set of folio Tables, constructed for each Star, according to its respective Latitude in 1780; but the distances in the EPHEMERIS from 1803 to 1808 were computed from the Latitudes corrected by my 45th Table, by making use of TAYLOR's Tables of Logarithmic Sines and Tangents to every Second of the Quadrant.

"The Distances of the Moon from the nine principal fixed Stars are, in this Ephemeris, as they were from that of 1809, computed from their Longitudes and Latitudes, which I have settled from late Observations, and their annual variations, including their proper motions, by comparing them with Dr. BRADLEY's places of them, settled about the year 1756. The Catalogue is inserted at the end of the Explanation of the Ephemeris, p. 162.

"The Calculations of the Planets' Places were made for the EPHEMERIS from 1780 to 1804, by the Tables contained in the Second Edition of M. DE LA LANDE's Astronomy; and those of the Eclipses of Jupiter's Satellites were made from Mr. WARGENTIN's Tables, which make a part of those Tables; excepting the Eclipses of Jupiter's Second Satellite, which were computed from the EPHEMERIS of 1781 to that of 1804, from new Tables of Mr. WARGENTIN, published at the end of the Nautical Almanac of 1779.

"In the Year 1792, came out the Third Edition of M. DE LA LANDE's Astronomy, which he was pleased to make me a present of, containing new Tables of the Sun, Moon, and Planets, and of the Eclipses of Jupiter's Satellites. These Tables are constructed upon the best Observations, and upon the Physical Theories of M. LA GRANGE and M. DE LA PLACE, founded upon Sir ISAAC NEWTON's Principles of Gravity. The Tables of the Sun were constructed by M. DE LAMBRE, entirely from my Observations; the Tables of the Moon are the same with Mr. CHARLES MASON's Tables of 1780, only substituting M. DE LA PLACE's Acceleration instead of MAYER's, and diminishing the mean Secular Motion by 23″. The Tables of Mercury, Venus, and Mars, were constructed by M. LA LANDE. The Tables of Jupiter and Saturn were

constructed by M. DE LAMBRE from the Theory of M. DE LA PLACE, who has accounted for the great Inequalities of their Motion to great exactness. The Tables of the Planet Herschel, called the Georgian Planet by us, were also calculated by M. DE LAMBRE, according to the Method of M. DE LA PLACE's Theory of Jupiter and Saturn. The Tables for calculating the Eclipses of Jupiter's Satellites were constructed by M. DE LAMBRE upon M. DE LA PLACE's elaborate Theory, and agree with Observation to surprising exactness. The learned world are much indebted to Mr. CHARLES MASON, M. LA GRANGE, M. DE LA PLACE, M. LA LANDE, and M. DE LAMBRE, for these valuable improvements in the Astronomical Tables. May I flatter myself, that I also have contributed my share to this great Work, by directing Mr. MASON in the improvement of the Lunar Tables by precise Rules, and pointing out to him the Equations contained in MAYER's Theory, though omitted in his Tables, to be ascertained by BRADLEY's Observations, and by supplying a variety of Observations, from which, in conjunction with others, this great Work has been completed?

"In the year 1806, the French Board of Longitude published further improved Tables of the Sun by M. DE LAMBRE; and improved Tables of the Moon by Mr. BURG, founded on M. DE LA PLACE's Theory, with the maxima of the equations stated according to my observations, and the epochs principally from my observations and Dr. BRADLEY's. In these, besides M. DE LA PLACE's other improvements, is introduced a new equation of the Moon's longitude, of the long period of 180 years, depending at once on the Moon's apogee and node and on the Sun's apogee, whose maximum he states at 14″, but of great consequence in settling the mean motions of the Moon. Mr. BURG has introduced six new equations, in addition to eight equations pointed out by MAYER's Theory, but whose maxima had been settled by Mr. MASON, from Dr. BRADLEY's observations. These Tables had been long expected, and our Board of Longitude had anticipated the important use which they should be applied to in the calculations of the Nautical Almanac.

"I was moreover furnished with several copies of the same, by the favour of the French Board of Longitude. These I immediately put into the hands of our computers; and the publication of the Nautical and Astronomical Almanac for 1813 came out, for the first time, distinguished with this considerable improvement.

"The epochs of these Tables having been adapted to the civil reckoning of time, and to the midnight with which the last day of the former year ends, and the new one begins, instead of the noon of the last day of the former year, as generally used in Astronomical Tables, I tried to adopt this method for the Nautical Almanac, but afterwards thought it best to relinquish it, and to retain the Astronomical time, fearing it would be attended with inconvenience, both in keeping the Register of the Greenwich Observations, and

in puzzling the sailors by changing the method of using the Nautical Almanac.

"The places of the planets, and the times of the eclipses of Jupiter's Satellites, beginning in the year 1805, have been calculated from the Tables annexed to the third edition of M. LA LANDE'S Astronomy, and the eclipses of the satellites set down to mean time, instead of apparent time, as formerly.

"The Rev. SAMUEL VINCE, Plumian Professor of Astronomy at Cambridge, having had an early communication of the new French Tables, and of the errata discovered in them by the comparer of the Nautical Almanac and myself, and having also noted several errata himself, has lately re-published them in a neat, elegant, and accurate manner, according to Astronomical time, together with the Tables of the planets (taking those of Mars from M. LE FRANCAIS LA LANDE'S Tables in the Connaissance des Tems of the 12th year) and the eclipses of Jupiter's satellites from the third edition of M. LA LANDE'S Astronomy. These will be used for the calculations of the Nautical Almanac for succeeding years.

"All the Articles of the EPHEMERIS were computed by two separate Persons, and examined by a third, except the Moon's Longitude, Latitude, Right Ascension, Declination, Semidiameter, and Parallax, with its Proportional Logarithm, which for Noon, were computed by one Person, and for Midnight by another, and the Truth of these Calculations ascertained by Means of Differences, which, for the Moon's Longitude, were carried as far as the Fourth Order.

"NEVIL MASKELYNE,

"ASTRONOMER ROYAL."

"GREENWICH,
September 25, 1810."

Anno 58vo Georgii III. Regis, Cap. XX.

An Act for more effectually discovering the Longitude at Sea, and encouraging Attempts to find a *Northern* Passage between the *Atlantic* and *Pacific* Oceans, and to approach the *Northern* Pole. [8 May 1818.]

WHEREAS by an Act passed in the Twelfth Year of Her late Majesty Queen *Anne*, intituled "An Act for providing a public Reward for such Person or Persons as shall discover the Longitude at Sea," it was enacted, that Persons holding certain Public Offices therein stated, for the time being, and certain other Persons therein mentioned by name, should be Commissioners for the Discovery of the Longitude at Sea, and for examining, trying, and judging of all Proposals, Experiments, and Improvements relating to the same: And whereas another Act was passed in the Twenty-sixth Year of the Reign of His late Majesty King *George* the Second, for rendering more effectual the last-recited Act: And whereas by another Act passed in the Thirtieth Year of the Reign of His present Majesty, intituled "An Act for continuing the Encouragement and Reward of Persons making certain Discoveries for finding the Longitude at Sea, or making other useful Discoveries and Improvements in Navigation, and for making Experiments relating thereto, and for adding a Commissioner to execute the several Acts for the Discovery of the Longitude at Sea," Persons holding certain other Offices, therein enumerated, for the time being, were added to and joined with the Commissioners appointed by the said first-mentioned Act: And whereas all the Persons mentioned by Name in the said first-recited Act are long since deceased: And whereas by reason of the Residence at the Universities of certain Professors who are constituted Members of the Board of Commissioners aforesaid, and by there not being a Power of electing into the said Board any Persons but the said Official Commissioners and the said Professors, it often happens that there are no Persons, particularly versed in the Sciences of the Mathematics and Astronomy resident in *London*, and belonging to the said Board; and that divers Persons of great Skill and Ability, whose Services would be most beneficial to the Objects of the said Board, are by the said Constitution of the Board excluded therefrom: Be it therefore enacted by the King's most Excellent Majesty, by and with the Advice and Consent of the Lords Spiritual and Temporal, and Commons, in this present Parliament assembled, and by the Authority of the same, That the said recited Acts shall be and the same are hereby repealed.

II. And be it further enacted, That from and after the passing of

this Act, the Lord High Treasurer of the United Kingdom of *Great Britain* and *Ireland*, or the First Commissioner for executing the said Office, the Lord High Admiral or First Commissioner for executing the Office of Lord High Admiral of the United Kingdom of *Great Britain* and *Ireland*, and such other Commissioners for executing the Office of Lord High Admiral of the United Kingdom of *Great Britain* and *Ireland* as may be Flag Officers in His Majesty's Fleet, the Speaker of the House of Commons, the President of the Committee of Council for Trade and Plantations, the Governor of the Royal Hospital for Seamen at *Greenwich*, the Judge of the High Court of Admiralty, the Secretaries of the Treasury, the Secretaries of the Admiralty, the Comptroller of the Navy, the President and Three Fellows of the Royal Society, the Royal Astronomer at *Greenwich*, the *Savilian*, *Lucasian*, *Plumian*, and *Lowndian* Professors of the Mathematics and Astronomy at the Universities of *Oxford* and *Cambridge*, the Observer at the *Radcliffe* Observatory at *Oxford*, all now and for the time being, and Three other Persons well versed in the Sciences of Mathematics, Astronomy, or Navigation, to be annually selected, chosen, and named, as hereinafter provided, shall be Commissioners for discovering the Longitude at Sea, and for examining, trying, and judging all Proposals, Experiments, and Improvements relating to the same, and for rewarding Persons making useful Discoveries and Improvements in or connected with Navigation.

III. And be it further enacted, That the Three Members of the Royal Society, so to be Commissioners, shall be the Right Honourable *Charles* Lord *Colchester*, *Davies Gilbert* Esquire, and Colonel *William Mudge*; and that in the event of any Vacancy by Death, Resignation, or Refusal to act, of any of the said Three Persons, or of any Person hereafter chosen to succeed them, such Vacancy shall be filled up by the Choice and Election of the President and Council of the Royal Society; and that the said Three other Commissioners shall be Doctor *William Hyde Wollaston*, and Doctor *Thomas Young*, and Captain *Henry Kater*, who shall continue Commissioners until the First Day of *January* One thousand eight hundred and twenty, after which Time the Three Persons to be the said last-mentioned Commissioners shall be annually, or as often as a Vacancy by Death, Resignation, or Refusal to act, may occur, selected, chosen, and named by the Lord High Admiral, or Commissioners for executing the Office of Lord High Admiral, and shall be Persons well versed in the Sciences of the Mathematics, Astronomy, or Navigation, and shall be generally resident in or near the City of *London*, and capable of attending at the Board of Commissioners, and of assisting in the Objects herein intrusted to the said Board.

IV. And whereas by the said recited Acts, and by divers other Acts passed from time to time, and all founded upon and referring to the said first-recited Acts, divers Duties and Authorities were imposed and conferred upon the Commissioners constituted by the said

recited Acts, and divers Sums of Money for various Purposes, and under different Conditions, were from Time to Time granted and provided to be employed and expended towards the Discovery of the Longitude at Sea, and for divers Purposes in such Acts mentioned, and for Rewards to such Persons as should ascertain the Longitude within certain Limits and Conditions therein specified; and for enabling the said Commissioners to cause a Survey to be made of the Shores of *Great Britain* and *Ireland*, and ascertaining the Latitude and Longitude of the Capes, Promontories, and Headlands thereof: And whereas some of the Provisions of the said Acts have been repealed, and others thereof have expired; and it is expedient wholly to repeal the same, for the Purpose of re-enacting and conferring upon the new Commissioners such of the Powers, Authorities, and Duties at present vested in the old Commissioners, as are fit to be continued in force: Be it therefore enacted, That all and every Act, conferring any Duty, Authority, or Power on the Commissioners constituted by the said first recited Acts, shall be and are hereby repealed.

V. And whereas the Longitude hath been ascertained within certain of the Limits and Conditions specified in the said Acts: And whereas certain other of the Limits and Conditions still subsisting are considered as impracticable, and have never been tried: And whereas it may conduce to the Advancement of Science, and to the Honour and Interest of this Country, that fit and proportionate Rewards should be provided for Persons who shall ascertain the Longitude within certain new Limits and Conditions: And whereas it is expedient that such Limits and Conditions should not be immutably fixed by Act of Parliament, but should be regulated on scientific Principles by the said Commissioners for the Discovery of the Longitude, and should be varied from Time to Time according to the Progress of Discoveries and the Advancement of Science: Be it enacted, That the said last-mentioned Commissioners shall from Time to Time, as they may see proper, propose, by their Memorial to His Majesty in Council, to direct and establish Three Scales of proportinate Rewards to be paid to any Person or Persons who shall, by any Principle not already made public, ascertain the Longitude within Three corresponding Scales of Limit and Condition, such Rewards not exceeding the respective Sums of Five Thousand Pounds, Seven Thousand Five Hundred Pounds, and Ten Thousand Pounds; and if His Majesty in Council shall be pleased to sanction and approve such Proposal, then that the same shall be published in the *London Gazette*, and that the said Commissioners shall have full Power and Authority to inquire into and examine all Proposals which may be made for finding the Longitude; and if on reasonable Experiment, to be judged of and certified by the said Commissioners, it shall be found that the Longitude hath been ascertained within any of the said Three Scales of Limit and Condition, agreeably to the said Order in Council, it shall be lawful to them to pay

or cause to be paid the proportionate Reward assigned to the Scale within which such Discovery or Experiment shall have ascertained the Longitude.

VI. And whereas it is expedient that the said Commissioners should be enabled to expend certain Sums towards making Experiments of Instruments, Modes, or Proposals, and for making and publishing Observations, Calculations, and Tables for ascertaining the Longitude, or towards improving or correcting such as may have been already made, or for other Purposes useful to Navigation; Be it enacted, That they may pay or expend any Sum or Sums of Money, not exceeding One Thousand Pounds in any one Year, towards the making, correcting, or publishing any such Experiments, Modes, Observations, Calculations, or Tables.

VII. And whereas it is expedient that the said Commissioners should be enabled to cause to be ascertained, as accurately as may be, the Latitude and Longitude of Places whereof the exact Situation hath not been already sufficiently ascertained; Be it enacted, That they may expend or cause to be expended any Sum not exceeding in the whole One Thousand Pounds in any one Year for such Purpose:

VIII. And whereas it may happen that Proposals, Inventions, and Tables, or Corrections and Amendments of former Proposals, Inventions, or Tables, ingenious in themselves and useful to Science, and which may deserve Encouragement, though they do not come within the Limits and Conditions specified for the before-mentioned Rewards, may be made to the said Commissioners; and it is expedient that they should be enabled to bestow such moderate Rewards upon the Person or Persons who may have made such Proposal, Invention, or Correction; Be it therefore enacted, that the said Commissioners may pay or cause to be paid such Sum not exceeding Five Hundred Pounds to any one Person for any one Proposal or Invention, or Two Thousand Pounds in one Year, as they may consider the said Proposals, Inventions, Tables, or Corrections to deserve.

IX. And whereas by an Act passed in the Eighteenth Year of His late Majesty King *George* the Second, intituled, " An Act for giving a public Reward to such Person or Persons, being His Majesty's Subject or Subjects, as shall discover a North-west Passage through *Hudson's Streights* to the *Western* and *Southern* Oceans of *America*," a Sum of Twenty Thousand Pounds was provided for the Owner or Owners of any Ship or Vessel which should first find out and sail through such Passage; and the Persons holding certain Offices therein named, for the time being, were appointed Commissioners for the said Discovery: And whereas by an Act passed in the Sixteenth Year of the Reign of His present Majesty, intituled " An Act for giving a public Reward to such Person or Persons, being His Majesty's Subject or Subjects, as shall discover a *Northern* Passage for Vessels by Sea between the *Atlantic* and *Pacific* Oceans, and also unto such as shall first approach by Sea

within One Degree of the *Northern* Pole;" the Reward in the last-recited Act was extended to the Commander or Commanders, Officers and Seamen, of any of His Majesty's Ships or Vessels, and to the Owner or Owners of any private Ship or Vessel which should find out and sail through any Passage by Sea between the *Atlantic* and *Pacific* Oceans, in any Direction or Parrallel of the *Northern* Hemisphere to the North of the Fifty-second Degree of North Latitude; and further assigning a Reward of Five Thousand Pounds to the Commander or Commanders, Officers and Seamen, of any of His Majesty's Ships or Vessels, or the Owner or Owners of any private Ship or Vessel which should first approach within One Degree of the *Northern* Pole; and appointing the Commissioners of the Longitude to be Commissioners for executing this last-recited Act: And whereas many Advantages, both to Commerce and Science, may be expected from granting such proportionate Rewards as well to such Person or Persons as may accomplish the Objects of the said Two last-mentioned Acts, and to such other Person or Persons as may approach thereto within certain Limits or Conditions: And whereas it is expedient that the Regulation of such Limits and Conditions, and the Decision, whether and how far such Object may have been accomplished, should be confided to the Commissioners for the Discovery of the Longitude at Sea appointed by this Act: Be it therefore enacted, That the said Two last-recited Acts shall be and they are hereby repealed.

X. And be it further enacted, That if any Ship or Ships, Vessel or Vessels, belonging to any of His Majesty's Subjects, or to His Majesty, shall first find out and sail through any Passage by Sea, between the *Atlantic* and *Pacific* Oceans, in any Direction or Parallel of the Northern Hemisphere, the Owner or Owners of such Ship or Ships, Vessel or Vessels, if belonging to any of His Majesty's Subjects, or the Commander or Commanders, Officers, Seamen, and Marines of such Ships or Vessels, if belonging to His Majesty, so first finding out and sailing through such Passage shall receive a Reward for such Discovery, of the sum of Twenty Thousand Pounds.

XI. And whereas Ships employed both in the *Spitzbergen* Seas and in *Davis's* Streights may have Opportunities of approaching the *North* Pole: And whereas Approaches towards the *Northern* Pole may tend greatly to the Discovery of a Communication between the *Atlantic* and *Pacific* Oceans, as well as may be attended with many Advantages to Commerce and Science: Be it therefore enacted, That if any Ship or Ships, Vessel or Vessels, shall approach within One Degree of the *Northern* Pole, the Owner of such Ship or Vessel, Ships or Vessels, if belonging to any of His Majesty's Subjects, or the Commander or Commanders, Officers, Seamen, and Marines, of any Ship or Ships, Vessel or Vessels, if belonging to His Majesty, so first approaching within One Degree of the *Northern* Pole, shall be entitled to receive a Reward of Five Thousand Pounds.

XII. And for the Encouragement of Persons who may attempt the

said Passage, or approach to the *Northern* Pole, but not wholly accomplish the same; Be it enacted, That the said Commissioners for discovering the Longitude at Sea may, by their Memorial, propose to His Majesty in Council to direct and establish proportionate Rewards to be paid to such Person as aforesaid who shall first have accomplished certain Proportions of the said Passage or Approach; and if His Majesty in Council shall be pleased to sanction and approve the said Proposal, then that the same shall be published in the *London Gazette*; and any Person or Persons accomplishing such Passages, or the specified Proportions of them, shall be entitled, on the Award of the said Commissioners, to receive such total or proportionate Sums as may have been offered for the Object which he or they may have then accomplished.

XIII. And in order to ascertain who are the first Discoverers of the said *Northern* Passage into the *Pacific* Ocean, and who are the first Approachers to within One Degree of the *Northern* Pole, and to whom either the whole Rewards or the proportionate Rewards by this Act respectively given do belong; Be it further enacted, That the Commissioners for the Discovery of the Longitude at Sea be authorized and empowered to call for the respective Journal or Journals, Book or Books, and Papers, kept on board the respective Ship or Ships, Vessel or Vessels, of the Claimant or Claimants respectively; and also to examine upon oath all such Persons as they the said Commissioners shall think proper, with regard to any Claim or Claims, as well any Person or Persons produced by the respective Claimant or Claimants, or any other Person or Persons who may seem capable of giving any Information; which Oath the said Commissioners are hereby empowered and required to administer; and the said Commissioners being fully satisfied, upon such Examination and Proof, that such *Northern* Passage is effectually discovered and sailed through, or that such Approach within One Degree of the *Northern* Pole, or any specified Proportion of the said Passage or Approach, shall have been made and accomplished, they are hereby authorized to pay or cause to be paid the said Rewards, or such Proportion of them as the Claimant or Claimants may under this Act, or under such Order in Council, be entitled to receive.

XIV. Provided always, and be it further enacted, That if the said Rewards, or either of them, shall be claimed by and adjudged to the Commander or Commanders, Officers, Seamen and Marines of any Ship or Ships, Vessel or Vessels, belonging to His Majesty, the same shall be disposed in favour of and distributed among such Commander or Commanders, Officers, Seamen, and Marines, in such Proportions as shall be directed by His Majesty in Council, and in no other manner.

XV. And be it further enacted, That the Executors, Administrators, and Assigns of any Person or Persons to whom any Sum whatsoever shall be awarded by the Commissioners for the Discovery of the Longitude, shall be entitled to receive the same in the event of the Death of such Person or Persons.

XVI. And whereas the Publication of the Nautical Almanack, constructed by proper Persons, under the Directions of the said Commissioners for the Discovery of the Longitude at Sea, is of great Importance to the Safety of Ships and Persons, and highly conducive to the general Interests of Commerce and Navigation; Be it therefore enacted, That it shall and may be lawful to and for the said Commissioners to cause such Nautical Almanacks, or other useful Tables, to be constructed, and to print, publish, and vend, or cause to be printed, published, and vended, any Nautical Almanack or Almanacks, or other useful Table or Tables, which they shall from Time to Time judge necessary and useful, in order to facilitate the Method of discovering the Longitude at Sea; any Law, Statute, exclusive Privilege, private Charter, or other Custom, to the contrary thereof notwithstanding.

XVII. And be it enacted, That no Person or Persons shall print, publish, or vend, or cause to be printed, published, or vended, any Nautical Almanack or Almanacks, or other Table or Tables, constructed under the direction of the said Commissioners, without being first licensed by the said Commissioners; and if any Person or Persons not so licensed, or not being authorized by the Person or Persons so licensed by the said Commissioners, shall print, publish, or vend, or cause to be printed, published, or vended, any such Almanack or Almanacks, or other Table or Tables, every such Person or Persons shall, for every Copy of such Nautical Almanack or Table so printed, published, or vended, forfeit and pay the Sum of Twenty Pounds, to be recovered by Action of Debt, Bill, Plaint, or Information in any of His Majesty's Courts of Record at *Westminster*; and that one Moiety of such Penalty and Forfeiture shall be to His Majesty, His Heirs and Successors, and the other Moiety to him or them that shall prosecute, inform, and sue for the same.

XVIII. And be it further enacted, That the said Penalty or Forfeiture shall be sued, informed, and prosecuted for by the Secretary of the said Commissioners of the Longitude for the Time being, or by some other Person or Persons authorized by the said Commissioners, and shall not be sued, informed, or prosecuted for by any other Person or Persons whomsoever; and that such Suits, Prosecutions, and Informations shall not abate by reason of the Death of such Prosecutors or any of them, but shall be continued in the case of a sole Plaintiff or Informer dying before Judgment obtained, in the Name of the Secretary of the said Commissioners for the Time being.

XIX. And be it further enacted, That no such Nautical Almanack or Almanacks, so published under the Directions of the said Commissioners, shall be subject or liable to any Stamp Duty whatsoever.

XX. And be it further enacted, That there shall be annually paid to each of the Three last-named Commissioners and their Successors, to be annually named according to the Provisions of this

Act, such annual Sum as His Majesty, by any Order in Council, shall be pleased to direct.

XXI. And whereas it is necessary to continue the Appointment of a Secretary to the Board of Commissioners for discovering the Longitude: And whereas it is highly expedient to the Interests of Navigation, and the Honour of this Country, that the said Nautical Almanack should be accurately computed, compared, and published, and that the Method of finding the Longitude by Timekeepers should also be encouraged; and that the Timekeepers belonging to His Majesty for the Use of His Ships of War should be carefully examined and regulated: Be it further enacted, That some Person of competent Skill and Ability shall be nominated and appointed by the Lord High Admiral or Commissioners of the Admiralty to be Secretary to the said Board of Commissioners, and for superintending, under the Directions of the Board in general, and the Astronomer Royal in particular, the due and correct Publication of the Nautical Almanack, and for taking care of and regulating such Timekeepers as may be intrusted to his Care by the Lord High Admiral or Commissioners of the Admiralty.

XXII. And be it further enacted, That the said Secretary shall hold his said Office during the Pleasure of the Lord High Admiral or Commissioners of the Admiralty; and for his Trouble and Pains therein he shall receive such annual Salary as His Majesty, by any Order in Council, may please to direct; but if it shall so happen that a Person shall not be found competent to execute the Three several Duties of Secretary to the said Board, and of superintending the Publication of the Nautical Almanack, and the Care and Regulation of Timekeepers, it shall be lawful to the said Commissioners to propose to His Majesty in Council to divide the said Duties, and assign them to several Persons, and to apportion to each Person such Part of the Salary established for the Performance of the united Duties as may seem to them fit and proportionate to the several Duty or Duties to be performed by such Person.

XXIII. And be it further enacted, That the said Salaries to the Three Annual Commissioners, and the said Secretary or Persons performing the last-mentioned Duties, shall be annually placed on the Ordinary Estimate of the Navy.

XXIV. And be it further enacted, That no Receipt of any Salary or Reward under this Act shall prevent any Officer entitled to any Military or Naval Half-pay from receiving such Half-pay in addition to any such Salary or Reward.

XXV. And be it further enacted, That the Commissioners for discovering the Longitude at Sea shall, at the beginning of every Year, make an Estimate of the Sum or Sums which they shall deem to be necessary for executing the Purposes of this Act in such Year, which Estimate shall be transmitted to the Secretary of the Admiralty, and, on being approved or amended by the Lord High Admiral or Commissioners of the Admiralty, shall be placed on the Ordinary Estimate of the Navy.

XXVI. And be it further enacted, That any Sum or Sums of Money to be paid under the Authority of this Act shall be paid, upon Certificates under the Hands and Seals of the Commissioners for the Discovery of the Longitude at Sea, to the Commissioners of the Navy for the Time being; and the Commissioners of the Navy shall forthwith make out a Bill or Bills for the Sum or Sums contained in such Certificate or Certificates, payable by the Treasurer of the Navy, and such Sum or Sums of Money the said Treasurer of the Navy is hereby required to pay immediately to the Person or Persons mentioned in the said Certificate or Certificates, out of any Money which shall be in his Hands unapplied for the Use of the Navy: Provided always, that all such Sums of Money as shall exceed the Sum of Five Thousand Pounds shall be certified under the Hands and Seals of Two-thirds at least of the said Commissioners, and all such Sums as shall exceed the Sum of One Thousand Pounds shall be certified under the Hands and Seals of the major Part of them, and that all such Sums as shall not exceed One Thousand Pounds shall be certified under the Hands and Seals of any five or more of them; such Certificates being in every Case whatsoever signed by One at least of the following Commissioners; that is to say, the Lord High Treasurer of the United Kingdom of *Great Britain* and *Ireland*, or the First Commissioner of the Treasury, the Lord High Admiral of the United Kingdom of *Great Britain* and *Ireland*, or First Commissioner of the Admiralty, the Secretaries of the Treasury, and the Secretaries of the Admiralty.

XXVII. And be it further enacted, That in any other respects where any Power or Authority is vested in the Commissioners under this Act, the same may be exercised by any Five or more Commissioners at the Board assembled, in as full and ample a Manner as if the whole Commissioners were then and there present; provided always, that at every such Board one of the following Commissioners at the least shall be present; that is to say, the First or one other of the Commissioners, or one of the Secretaries of the Admiralty; and that also three other of the following Commissioners at the least shall be present, that is to say, the President of the Royal Society, the Astronomer Royal, the Professors and Observer at the Two Universities, and the Three Commissioners annually elected and receiving salaries as aforesaid.

XXVIII. And be it further enacted, That there shall be held at least Four stated Meetings of the said Commissioners within every Year, to be held on such Days as His Majesty by any Order in Council may appoint, and such other Meetings as from Time to Time may be necessary; of all which Meetings due Notice shall be given to the said Commissioners respectively.

ORDER IN COUNCIL.

At the Court at *Carlton House*, the Nineteenth of *March*, 1819.

Present, HIS ROYAL HIGHNESS THE PRINCE REGENT In Council.

WHEREAS there was this Day read at the Board a Memorial from the Commissioners appointed by Act of Parliament for more effectually discovering the Longitude at Sea, dated the Fourth of last Month, in the Words following, viz.

"Whereas by an Act of the Fifty-eighth Year of His present Majesty, intituled, "An Act for more effectually discovering the Longitude at Sea, and encouraging Attempts to find a Northern Passage between the *Atlantic* and *Pacific* Oceans, and to approach the *Northern* Pole," it is provided, that "for the Encouragement of Persons who may attempt the said Passage, or approach to the *Northern* Pole, but not wholly accomplish the same, the said Commissioners may, by their Memorial, propose to His Majesty in Council, to direct and establish proportionate Rewards to be paid to such Person as aforesaid, who shall first have accomplished certain Proportions of the said Passage or Approach:"

And whereas it appears that the Progress of Discovery has already advanced to the Eastern Coast of *America*, and within the Arctic Circle, as far as Ninety Degrees West Longitude, or thereabouts, from *Greenwich*; and Northwards has not yet arrived, according to any well-authenticated Accounts, so far as Eighty-one Degrees of North Latitude:

We, your Memorialists, beg leave most humbly to represent these Particulars for Your Royal Highness's Consideration, and to submit with all Humility, whether Your Royal Highness may not be graciously pleased to establish the following Scale of Rewards to be allotted according to the Intention of the Act:

	£.
1. To the first Ship belonging to any of His Majesty's Subjects, or His Majesty, that shall reach the Longitude of One Hundred and Ten Degrees West from *Greenwich*, or the Mouth of *Hearne's* or *Copper Mine* River, by sailing within the Arctic Circle -	5,000.
To the first Ship as aforesaid, that shall reach the Longitude of One Hundred and Thirty Degrees West from *Greenwich*, or the *Whale Island* of *Mackenzie*, by sailing within the Arctic Circle - - - - - - - - - - - - - - - - - - -	10,000.
To the first Ship as aforesaid, that shall reach the Longitude of One Hundred and Fifty Degrees West from *Greenwich*, by sailing Westwards within the Arctic Circle - - - - - - -	15,000.
The Act having already allotted to the first Ship that shall reach the *Pacific* Ocean by a North West Passage, the full Reward of - - - - - - - - - - - - - - - - -	20,000.

2. To the first Ship as aforesaid, that shall reach to Eighty-three Degrees of North Latitude - - - - - - - - - - -	£ 1,000.
To Eighty-five Degrees - - - - - - - - - - - -	2,000.
To Eighty-seven Degrees - - - - - - - - - - - -	3,000.
To Eighty-eight Degrees - - - - - - - - - - - -	4,000.

The Act having already allotted to the first Ship that shall reach to or beyond Eighty-nine Degrees, the full Reward of - 5,000."

His Royal Highness the Prince Regent having taken the said Memorial into Consideration, was pleased in the Name and on the Behalf of His Majesty, and by and with the Advice of His Majesty's Privy Council, to sanction and approve of, and doth hereby sanction and approve of the Scale of Rewards proposed in the said Memorial.

(Signed) CHETWYND.

By the COMMISSIONERS appointed by the Act of the Fifty-eighth Year of His present Majesty, intituled, "An Act for more effectually discovering the Longitude at Sea; and encouraging Attempts to find a Northern Passage between the *Atlantic* and *Pacific* Oceans, and to approach the *Northern* Pole."

WE do hereby, in pursuance of the Powers vested in us by the said Act, license, authorise, and empower you to print the Nautical Almanacs and Astronomical Ephemerides for the Years 1822, 1823, and 1824; together with such other useful Tables for facilitating the Method of discovering the Longitude at Sea, as have been, or may be, constructed under our Direction, and which will be delivered to you by, or by the Direction of, JOHN POND, Esq. His Majesty's Astronomer Royal at *Greenwich*; for all which this shall be your sufficient Warrant; reserving to ourselves, nevertheless, and to our Successors, Commissioners of the aforesaid Board, or to the major Part of them, Power to revoke and annul the Appointment hereby made, by Writing signed by us, or them, whenever we or they shall see Occasion. Given under our Hands the First Day of *April*, 1819.

J. W. CROKER, S.A.
JOS. BANKS, P.R.S.
DAVIES GILBERT.
ROB. WOODHOUSE.
JOHN POND, A.R.
A. ROBERTSON.
S. P. RIGAUD.
ISAAC MILNER.
SAMUEL VINCE.
W. LAX.
W. H. WOLLASTON.
W. MUDGE.

By Command,

THOMAS YOUNG, *Secretary*.

To Mr. Thomas Bensley and Son, Printers,
Bolt Court, Fleet Street.

By the COMMISSIONERS appointed by the Act of the Fifty-eighth Year of His present Majesty, intituled, "An Act for more effectually discovering the Longitude at Sea; and encouraging Attempts to find a Northern Passage between the *Atlantic* and *Pacific* Oceans, and to approach the *Northern* Pole."

WE do hereby, in pursuance of the Powers vested in us by the said Act, license, authorise, and empower you to publish and vend, and cause to be published and vended, all such Nautical Almanacs and Astronomical Ephemerides, and such other useful Tables, constructed under our Direction, as have hitherto been printed or shall hereafter be printed for the several Years next ensuing, down to the Year 1824 inclusive. For all which this shall be your sufficient Warrant; reserving to ourselves, nevertheless, and to our Successors, Commissioners of the said Board, or to the proper Part of them, Power to revoke and annul the Appointment hereby made, by Writing signed by us, or them, whenever we or they shall see Occasion. Given under our Hands the First Day of *April*, 1819.

J. W. CROKER, S.A.
JOS. BANKS, P.R.S.
DAVIES GILBERT.
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A. ROBERTSON.
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ISAAC MILNER.
SAMUEL VINCE.
W. LAX.
W. H. WOLLASTON.
W. MUDGE.

To Mr. John Murray, Bookseller,
Albemarle Street.

By Command,

THOMAS YOUNG, *Secretary.*

PRINCIPAL ARTICLES

OF

THE ALMANAC OF 1823.

Chronological Cycles.

Dominical Letter - - - -	E
Lunar Cycle, or Golden Numb.	19
Epact - - - - - - - - - -	18
Solar Cycle - - - - - - -	12
Roman Indiction - - - -	11
Julian Period - - - -	6536

Ember Days.

February -	19, 21, and 22
May - -	21, 23, and 24
September	17, 19, and 20
December	17, 19, and 20

MOVEABLE FEASTS.

Septuagesima Sunday - -	Jan. 26
Quinq. or Shrove Sunday	Feb. 9
Ash Wed. or 1 Day of Lent	Feb. 12
Mid-Lent Sunday - - - -	Mar. 9
Palm Sunday - - - - - -	Mar. 23
EASTER DAY - - - -	Mar. 30
Low Sunday - - - - - -	Apr. 6
Rogation Sunday - - -	May 4
Asc. Day, or Holy Thurs.	May 8
Whit Sunday - - - - -	May 18
Trinity Sunday - - - - -	May 25
Advent Sunday - - - -	Nov. 30

TERMS.

Names	*London.* Begins	Ends	*Oxford.* Begins	Ends	*Cambridge.* Begins	Ends
Hilary, or Lent,	Jan. 23	Feb. 12	Jan. 14	Mar. 22	Jan. 13 Div. Feb. 15 Midn.	March 21
Easter,	April 16	May 12	April 9	May 17	April 9 Div. May 22 Noon.	July 4
Trinity,	May 30	June 18	May 21	July 5		
Michael.	Nov. 6	Nov. 28	Oct. 10	Dec. 17	Oct. 10 Div. Nov. 12 Midn.	Dec. 16

Oxford Act July 1.——*Camb. Commencement July* 1.

ECLIPTIC AND EQUINOCTIAL.

1823.

Obliquity of the Ecliptic			Equation of Equinoctial Points.
° ′ ″			″
23. 27. 51, 6	Jan. 1.	+	14, 1
23. 27. 51, 7	Apr. 1.	+	15, 0
23. 27. 50, 0	July 1.	+	15, 8
23. 27. 50, 0	Oct. 1.	+	16, 4
23. 27. 48, 4	Dec. 31.	+	17, 1

SOLAR AND LUNAR ECLIPSES

IN THE YEAR 1823.

Jan. 11. *SUN eclipsed, invisible at Greenwich.*
☌ at $20^h. 53^m\frac{3}{4}$, in Long. $9^s. 21°. 26′$, ☽'s Lat. 1°. 24 N.

Jan. 26. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning	3. 25
☽ rises eclipsed	4. $21\frac{1}{2}$
Beginning of total Darkness	4. $22\frac{1}{2}$
Ecliptic ☊	5. $10\frac{3}{4}$
Middle	5. $11\frac{1}{2}$
End of total Darkness	6. $0\frac{1}{2}$
End of Eclipse	6. 58

Digits eclipsed, 20°. $48′\frac{1}{3}$ from N. side of ⊖'s shadow.

Feb. 10. *SUN eclipsed, invisible at Greenwich.*
☌ at $15^h. 4^m\frac{1}{2}$, in Long $10^s. 21°. 39′\frac{1}{4}$, ☽'s Lat. $1°.20′\frac{3}{4}$ N.

July 7. *SUN eclipsed, invisible at Greenwich.*
☌ at $18^h. 40^m\frac{1}{4}$, in Long. $3^s. 15°. 14′\frac{1}{4}$, ☽'s Lat. $1°. 8′\frac{3}{4}$ N.

July 22. *MOON eclipsed, partly visible at Greenwich.*

	H. M.
Beginning	13. $29\frac{3}{4}$
Beginning of total Darkness	14. $36\frac{1}{2}$
Middle	15. 26
Ecliptic ☊	15. 28
End of total Darkness	16. $15\frac{1}{2}$
☽ sets eclipsed	16. $28\frac{1}{2}$
End of Eclipse	17. $22\frac{1}{4}$

Digits eclipsed, 18°. $11′\frac{3}{4}$ from N. side of ⊖'s shadow.

Aug. 6. *SUN eclipsed, invisible at Greenwich.*
☌ at $1^h. 53^m\frac{1}{4}$, in Long. $4^s. 13°. 14′$, ☽'s Lat. $1°. 24′\frac{3}{4}$ S.

Dec. 31. *SUN eclipsed, invisible at Greenwich.*
☌ at $20^h. 7^m$, in Long. $9^s. 9°. 56′\frac{1}{4}$, ☽'s Lat. $47′\frac{1}{2}$ S.

EXPLANATION OF THE CHARACTERS

USED IN THE

ASTRONOMICAL EPHEMERIS.

The PLANETS, and their relations.

☉	The Sun.	♂	Mars.
☽	The Moon.	♃	Jupiter.
☿	Mercury.	♄	Saturn.
♀	Venus.	♅	Georgian.
⊖	The Earth.		

☊ A Planet's Ascending Node.

☋ The Descending Node.

☌ Conjunction, or Planets situated in the same Longitude.

□ Quadrature, or Planets situated in Longitudes differing 3 Signs from each other.

☍ Opposition, or Planets situated in opposite Longitudes, or differing 6 Signs from each other.

N.	North.	Inf.	Inferior.	Im.	Immersion.
S.	South.	Sup.	Superior.	Em.	Emersion.

SIGNS of the ZODIAC.

First	♈	Aries.	(0+..)	7th	♎	Libra.	(6+..)
2d	♉	Taurus.	1	8th	♏	Scorpio.	7
3d	♊	Gemini.	2	9th	♐	Sagittarius.	8
4th	♋	Cancer.	3	10th	♑	Capricornus.	9
5th	♌	Leo.	4	11th	♒	Aquarius.	10
6th	♍	Virgo.	5	12th	♓	Pisces.	11

ERRATA.

Page vi. line 26, *for* p. 162 *read* p. 178.

—— 85, Aug. 1. *omit the line.*

JANUARY 1823.

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
W.	1	*Circumcision.*
Th.	2	
F.	3	
Sa.	4	
Sun.	5	2*d Sund. after Christmas.*
M.	6	*Epiphany.*
Tu.	7	
W.	8	Lucian.
Th.	9	
F.	10	
Sa.	11	
Sun.	12	1*st Sunday after Epiph.*
M.	13	Camb. Hilary Term. beg.
Tu.	14	Oxford T. begins.
W.	15	
Th.	16	
F.	17	
Sa.	18	Prisca.
Sun.	19	2*d Sunday after Epiph.*
M.	20	Fabian. In 8 d. of St. Hil.
Tu.	21	Agnes. [1 ret.
W.	22	Vincent.
Th.	23	Hilary Term begins.
F.	24	
Sa.	25	*Conversion of St. Paul.*
Sun.	26	*Septuagesima Sunday.*
M.	27	*D. of Sussex b.* In 15 d.
Tu.	28	[of St. Hil. 2 ret.
W.	29	*K. Geo. IV. Access.* 1820.
Th.	30	*K. Charles I. Martyr.*
F.	31	*K. Geo. IV. procl.* 1820.

Phases of the MOON.

	D. H. M.
☾ *Last Quarter* . . .	3. 16. 10
● New Moon	11. 20. 54
☽ *First Quarter* . .	19. 14. 0
○ Full Moon	26. 5. 11

Other *Phenomena.*

D. H. M.	
4. - . -	♄ Stationary.
8. 3. 38	☽ α ♏.
8. - . -	☿ ♀, ☿ $65\frac{3}{4}'$ S. of ♀.
11. - . -	☉ eclipsed, invisible.
12. 7. 21	☽ ♀.
12. 10. 34	☽ ☿.
13. 6. 43	☽ ♂.
20. 6. 48	☉ enters ♒.
21. - . -	♃ Stationary.
22. - . -	☿ ♂, ☿ $27\frac{1}{2}'$ S. of ♂.
26. - . -	☽ eclipsed, partly vi- [sible.

Days of the Week.	Days of the Month.	The SUN's Longitude.	The SUN's Rt. Ascen. in Time.	The SUN's Declin. South.	Diff.	Equation of Time. Add to app. Time.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S	M. S.	S.
W.	1	9. 10. 20. 52	18. 45. 1, 8	23. 3. 39	4. 59	3. 41, 6	28, 4
Th.	2	9. 11. 22. 2	18. 49. 26, 8	22. 58. 40	5. 27	4. 10, 0	28, 0
F.	3	9. 12. 23. 12	18. 53. 51, 4	22. 53. 13	5. 54	4. 38, 0	27, 6
Sa.	4	9. 13. 24. 23	18. 58. 15, 7	22. 47. 19	6. 21	5. 5, 6	27, 3
Sun.	5	9. 14. 25. 33	19. 2. 39, 6	22. 40. 58	6. 48	5. 32, 9	26, 8
M.	6	9. 15. 26. 44	19. 7. 3, 1	22. 34. 10	7. 15	5. 59, 7	26, 5
Tu.	7	9. 16. 27. 55	19. 11. 26, 1	22. 26. 55	7. 41	6. 26, 2	25, 9
W.	8	9. 17. 29. 6	19. 15. 48, 7	22. 19. 14	8. 8	6. 52, 1	25, 4
Th.	9	9. 18. 30. 17	19. 20. 10, 8	22. 11. 6	8. 34	7. 17, 5	24, 9
F.	10	9. 19. 31. 28	19. 24. 32, 3	22. 2. 32	9. 0	7. 42, 4	24, 4
Sa.	11	9. 20. 32. 38	19. 28. 53, 3	21. 53. 32	9. 26	8. 6, 8	23, 7
Sun.	12	9. 21. 33. 48	19. 33. 13, 7	21. 44. 6	9. 50	8. 30, 5	23, 2
M.	13	9. 22. 34. 57	19. 37. 33, 5	21. 34. 16	10. 16	8. 53, 7	22, 5
Tu.	14	9. 23. 36. 6	19. 41. 52, 6	21. 24. 0	10. 41	9. 16, 2	21, 9
W.	15	9. 24. 37. 14	19. 46. 11, 1	21. 13. 19	11. 4	9. 38, 1	21, 1
Th.	16	9. 25. 38. 22	19. 50. 28, 8	21. 2. 15	11. 29	9. 59, 2	20, 5
F.	17	9. 26. 39. 29	19. 54. 45, 9	20. 50. 46	11. 53	10. 19, 7	19, 7
Sa.	18	9. 27. 40. 34	19. 59. 2, 2	20. 38. 53	12. 16	10. 39, 4	19, 0
Sun.	19	9. 28. 41. 39	20. 3. 17, 8	20. 26. 37	12. 39	10. 58, 4	18, 2
M.	20	9. 29. 42. 43	20. 7. 32, 7	20. 13. 58	13. 2	11. 16, 6	17, 5
Tu.	21	10. 0. 43. 45	20. 11. 46, 7	20. 0. 56	13. 24	11. 34, 1	16, 6
W.	22	10. 1. 44 47	20. 16. 0, 0	19. 47. 32	13. 46	11. 50, 7	15, 9
Th.	23	10. 2. 45. 47	20. 20. 12, 4	19. 33. 46	14. 8	12. 6, 6	15, 0
F.	24	10. 3. 46. 46	20. 24. 24, 1	19. 19. 38	14. 28	12. 21, 6	14, 3
Sa.	25	10. 4. 47. 44	20. 28. 34, 9	19. 5. 10	14. 50	12. 35, 9	13, 4
Sun.	26	10. 5. 48. 41	20. 32. 45, 0	18. 50. 20	15. 11	12. 49, 3	12, 7
M.	27	10. 6. 49. 36	20. 36. 54, 2	18. 35. 9	15. 30	13. 2, 0	11, 8
Tu.	28	10. 7. 50. 32	20. 41. 2, 6	18. 19. 39	15. 50	13. 13, 8	11, 0
W.	29	10. 8. 51. 25	20. 45. 10, 2	18. 3. 49	16. 10	13. 24, 8	10, 2
Th.	30	10. 9. 52. 19	20. 49. 17, 0	17. 47. 39	16. 29	13. 35, 0	9, 4
F.	31	10. 10. 53. 11	20. 53. 23, 0	17. 31. 10		13. 44, 4	

Days	Time of ☉'s Semidiam. passing Merid.	THE SUN'S Semi-diameter.	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 10, 8	16. 17, 8	2. 32, 9	9. 992661	10. 8. 17
7	1. 10, 5	16. 17, 7	2. 32, 9	9. 992726	10. 7. 58
13	1. 10, 1	16. 17, 4	2. 32, 8	9. 992861	10. 7. 39
19	1. 9, 5	16. 16, 9	2. 32, 6	9. 993053	10. 7. 20
25	1. 8, 9	16. 16, 3	2. 32, 4	9. 993320	10. 7. 1

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite. Emersions. Days.	H. M. S.	II. Satellite. Emersions. Days.	H. M. S.	III. Satellite. Days.	H. M. S.
*1	11. 25. 22	1	22. 56. 49	*4	13. 32. 4 Im.
*3	5. 54. 14	*5	12. 15. 9	4	15. 50. 24 E.
5	0. 23. 3	9	1. 33. 44	11	17. 32. 39 Im.
6	18. 51. 56	12	14. 52. 5	11	19. 51. 48 E.
*8	13. 20. 46	16	4. 10. 34	18	21. 33. 20 Im.
*10	7. 49. 41	19	17. 28. 54	18	23. 53. 15 E.
12	2. 18. 31	*23	6. 47. 18	26	1. 34. 35 Im.
13	20. 47. 26	26	20. 5. 36	26	3. 55. 22 E.
15	15. 16. 18	*30	9. 23. 57		
*17	9. 45. 13				
19	4. 14. 5				
20	22. 43. 2				
22	17. 11. 54				
*24	11. 40. 52				
*26	6. 9. 45			IV. Satellite.	
28	0. 38. 43				
29	19. 7. 36				
*31	13. 36. 35				

Days	The Planets' Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Rt. Asc. *in Time.*	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
☿			*MERCURY.*			Sup. ☌ 2d. 13h.	
1	9. 7. 25	5. 28 S	9. 9. 25	1. 44 S	24. 52 S	18. 42	23. 59
4	9. 16. 11	6. 4	9. 14. 17	1. 54	24. 35	19. 3	0. 5
7	9. 25. 21	6. 33	9. 19. 12	2. 1	24. 6	19. 24	0. 13
10	10. 5. 2	6. 52	9. 24. 11	2. 6	23. 22	19. 46	0. 21
13	10. 15. 20	7. 0	9. 29. 13	2. 6	22. 23	20. 7	0. 30
16	10. 26. 25	6. 53	10. 4. 18	2. 2	21. 11	20. 29	0. 38
19	11. 8. 28	6. 29	10. 9. 25	1. 54	19. 44	20. 50	0. 46
22	11. 21. 38	5. 43	10. 14. 30	1. 39	18. 5	21. 10	0. 54
25	0. 6. 3	4. 32	10. 19. 30	1. 19	16. 14	21. 29	1. 1
28	0. 21. 50	2. 54	10. 24. 15	0. 51	14. 15	21. 47	1. 6
31	1. 8. 55	0. 54	10. 28. 34	0. 16	12. 14	22. 3	1. 10
♀			*VENUS.*				
1	9. 15. 16	1. 42 S	9. 12. 26	0. 44 S	23. 36 S	18. 54	0. 9
7	9. 24. 45	2. 10	9. 19. 59	0. 55	22. 53	19. 27	0. 16
13	10. 4. 14	2. 34	9. 27. 32	1. 6	21. 45	19. 59	0. 22
19	10. 13. 43	2. 54	10. 5. 4	1. 15	20. 13	20. 31	0. 28
25	10. 23. 13	3. 9	10. 12. 36	1. 21	18. 21	21. 2	0. 33
♂			*MARS.*				
1	10. 11. 41	1. 50 S	9. 28. 46	1. 7 S	21. 31 S	20. 5	1. 19
7	10. 15. 27	1. 51	10. 3. 29	1. 7	20. 29	20. 24	1. 13
13	10. 19. 14	1. 51	10. 8. 13	1. 7	19. 18	20. 44	1. 6
19	10. 23. 2	1. 51	10. 12. 57	1. 6	18. 0	21. 3	1. 0
25	10. 26. 50	1. 50	10. 17. 41	1. 5	16. 35	21. 22	0. 53
♃			*JUPITER.*				
1	2. 4. 51	0. 44 S	1. 27. 11	0. 52 S	18. 43 N	3. 40	8. 54
7	2. 5. 22	0. 43	1. 26. 50	0. 50	18. 39	3. 39	8. 26
13	2. 5. 54	0. 43	1. 26. 36	0. 49	18. 38	3. 38	7. 59
19	2. 6. 26	0. 42	1. 26. 30	0. 47	18. 38	3. 38	7. 33
25	2. 6. 58	0. 41	1. 26. 32	0. 46	18. 40	3. 38	7. 8
♄			*SATURN.*			□ 23d. 19¾h.	
1	1. 8. 56	2. 24 S	1. 3. 16	2. 31 S	10. 15 N	2. 8	7. 21
7	1. 9. 9	2. 23	1. 3. 16	2. 29	10. 17	2. 8	6. 55
13	1. 9. 22	2. 23	1. 3. 19	2. 27	10. 20	2. 8	6. 29
19	1. 9. 35	2. 23	1. 3. 27	2. 25	10. 24	2. 8	6. 4
25	1. 9. 48	2. 23	1. 3. 38	2. 23	10. 30	2. 9	5. 39
♅			*GEORGIAN.*				
1	9. 7. 30	0. 19 S	9. 7. 38	0. 18 S	23. 33 S	18. 33	23. 44
11	9. 7. 37	0. 19	9. 8. 14	0. 18	23. 31	18. 36	23. 3
21	9. 7. 44	0. 19	9. 8. 49	0. 19	23. 29	18. 38	22. 23

Days of the Week.	Days of the Month.	THE MOON'S Longitude. Noon. S. D. M. S.	Longitude. Midnight. S. D. M. S.	Latitude. Noon. D. M. S.	Latitude. Midnight. D. M. S.
W.	1	5. 7. 59. 44	5. 14. 47. 9	2. 42. 0 S	3. 12. 47 S
Th.	2	5. 21. 27. 48	5. 28. 2. 1	3. 40. 24	4. 4. 39
F.	3	6. 4. 30. 11	6. 10. 52. 44	4. 25. 23	4. 42. 31
Sa.	4	6. 17. 10. 12	6. 23. 23. 6	4. 56. 0	5. 5. 49
Sun.	5	6. 29. 31. 59	7. 5. 37. 22	5. 12. 1	5. 14. 38
M.	6	7. 11. 39. 49	7. 17. 39. 51	5. 13. 43	5. 9. 23
Tu.	7	7. 23. 37. 56	7. 29. 34. 32	5. 1. 42	4. 50. 48
W.	8	8. 5. 30. 7	8. 11. 25. 5	4. 36. 48	4. 19. 52
Th.	9	8. 17. 19. 45	8. 23. 14. 29	4. 0. 10	3. 37. 52
F.	10	8. 29. 9. 35	9. 5. 5. 21	3. 13. 12	2. 46. 24
Sa.	11	9. 11. 2. 1	9. 16. 59. 49	2. 17. 41	1. 47. 21
Sun.	12	9. 22. 59. 0	9. 28. 59. 45	1. 15. 42	0. 43. 3 S
M.	13	10. 5. 2. 17	10. 11. 6. 50	0. 9. 43 S	0. 23. 55 N
Tu.	14	10. 17. 13. 36	10. 23. 22. 49	0. 57. 30 N	1. 30. 39
W.	15	10. 29. 34. 44	11. 5. 49. 35	2. 2. 59	2. 34. 6
Th.	16	11. 12. 7. 40	11. 18. 29. 16	3. 3. 38	3. 31. 11
F.	17	11. 24. 54. 42	0. 1. 24. 13	3. 56. 22	4. 18. 47
Sa.	18	0. 7. 58. 8	0. 14. 36. 42	4. 38. 5	4. 53. 53
Sun.	19	0. 21. 20. 9	0. 28. 8. 41	5. 5. 53	5. 13. 45
M.	20	1. 5. 2. 25	1. 12. 1. 23	5. 17. 15	5. 16. 9
Tu.	21	1. 19. 5. 30	1. 26. 14. 38	5. 10. 15	4. 59. 31
W.	22	2. 3. 28. 28	2. 10. 46. 34	4. 43. 56	4. 23. 37
Th.	23	2. 18. 8. 22	2. 25. 33. 9	3. 58. 48	3. 29. 49
F.	24	3. 3. 0. 5	3. 10. 28. 17	2. 57. 7	2. 21. 18
Sa.	25	3. 17. 56. 43	3. 25. 24. 23	1. 43. 2	1. 3. 3 N
Sun.	26	4. 2. 50. 14	4. 10. 13. 17	0. 22. 9 N	0. 18. 52 S
M.	27	4. 17. 32. 37	4. 24. 47. 25	0. 59. 14 S	1. 38. 12
Tu.	28	5. 1. 57. 0	5. 9. 0. 51	2. 15. 9	2. 49. 31
W.	29	5. 15. 58. 33	5. 22. 49. 51	3. 20. 51	3. 48. 47
Th.	30	5. 29. 34. 41	6. 6. 13. 5	4. 13. 3	4. 33. 30
F.	31	6. 12. 45. 15	6. 19. 11. 29	4. 50. 3	5. 2. 40

Days of the Month.	Age.	Pass. Mer.	THE MOON's Right Ascension. Noon.		THE MOON's Declination. Noon.	
			Noon.	Midn.	Noon.	Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	20	16. 19	158. 38. 49	164. 44. 59	6. 4. 27 N	3. 2. 0 N
2	21	17. 3	170. 42. 43	176. 34. 21	0. 0. 45 N	2. 57. 28 S
3	22	17. 47	182. 22. 4	188. 7. 57	5. 50. 58 S	8. 38. 18
4	23	18. 30	193. 53. 56	199. 41. 46	11. 18. 11	13. 49. 21
5	24	19. 14	205. 32. 58	211. 28. 48	16. 10. 38	18. 20. 53
6	25	20. 1	217. 30. 18	223. 38. 10	20. 18. 56	22. 3. 40
7	26	20. 49	229. 52. 38	236. 13. 37	23. 33. 56	24. 48. 41
8	27	21. 38	242. 40. 36	249. 12. 36	25. 46. 55	26. 27. 48
9	28	22. 29	255. 48. 14	262. 25. 51	26. 50. 41	26. 55. 6
10	29	23. 19	269. 3. 40	275. 39. 51	26. 40. 56	26. 8. 17
11	1	☌	282. 12. 38	288. 40. 35	25. 17. 33	24. 9. 27
12	2	0. 7	295. 2. 34	301. 17. 51	22. 44. 54	21. 5. 2
13	3	0. 54	307. 26. 10	313. 27. 39	19. 11. 5	17. 4. 26
14	4	1. 39	319. 22. 47	325. 12. 27	14. 46. 31	12. 18. 47
15	5	2. 22	330. 57. 46	336. 40. 6	9. 42. 41	6. 59. 43
16	6	3. 4	342. 21. 3	348. 2. 24	4. 11. 22 S	1. 19. 6 S
17	7	3. 47	353. 46. 3	359. 34. 0	1. 35. 33 N	4. 30. 53 N
18	8	4. 31	5. 28. 23	11. 31. 24	7. 25. 12	10. 16. 37
19	9	5. 18	17. 45. 12	24. 11. 55	13. 3. 2	15. 42. 9
20	10	6. 10	30. 53. 25	37. 51. 13	18. 11. 26	20. 28. 2
21	11	7. 6	45. 6. 14	52. 38. 31	22. 28. 53	24. 10. 52
22	12	8. 6	60. 27. 3	68. 29. 34	25. 30. 51	26. 25. 59
23	13	9. 10	76. 42. 30	85. 1. 17	26. 53. 55	26. 53. 6
24	14	10. 15	93. 20. 46	101. 35. 48	26. 22. 56	25. 23. 56
25	15	11. 17	109. 41. 43	117. 34. 56	23. 57. 44	22. 6. 48
26	16	12. 16	125. 13. 7	132. 35. 8	19. 54. 19	17. 23. 51
27	17	13. 9	139. 40. 59	146. 31. 32	14. 39. 6	11. 43. 45
28	18	13. 59	153. 8. 14	159. 32. 57	8. 41. 15	5. 34. 44 N
29	19	14. 45	165. 47. 42	171. 54. 39	2. 27. 4 N	0. 39. 15 S
30	20	15. 31	177. 55. 53	183. 53. 27	3. 42. 1 S	6. 39. 20
31	21	16. 15	189. 49. 16	195. 45. 7	9. 29. 30	12. 11. 1

Days of the Week.	Days of the Month.	THE MOON'S Semidiameter. Noon.	Semidiameter. Midnight.	Hor. Parallax. Noon.	Hor. Parallax. Midnight.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
		M. S.	M. S.	M. S.	M. S.		
W.	1	15. 54	15. 46	58. 20	57. 51	4894	4930
Th.	2	15. 38	15. 30	57. 22	56. 54	4966	5002
F.	3	15. 23	15. 16	56. 27	56. 2	5036	5068
Sa.	4	15. 10	15. 4	55. 39	55. 19	5098	5124
Sun.	5	14. 59	14. 55	55. 1	54. 45	5148	5169
M.	6	14. 52	14. 49	54. 32	54. 21	5186	5201
Tu.	7	14. 46	14. 44	54. 12	54. 5	5213	5222
W.	8	14. 43	14. 42	54. 0	53. 57	5229	5233
Th.	9	14. 42	14. 42	53. 56	53. 57	5234	5233
F.	10	14. 43	14. 44	53. 59	54. 2	5230	5226
Sa.	11	14. 45	14. 47	54. 7	54. 14	5219	5210
Sun.	12	14. 49	14. 51	54. 21	54. 29	5201	5190
M.	13	14. 53	14. 56	54. 38	54. 48	5178	5165
Tu.	14	14. 59	15. 2	55. 0	55. 12	5149	5133
W.	15	15. 6	15. 10	55. 25	55. 40	5116	5097
Th.	16	15. 14	15. 19	55. 56	56. 12	5076	5055
F.	17	15. 24	15. 29	56. 29	56. 47	5034	5011
Sa.	18	15. 34	15. 39	57. 7	57. 28	4985	4959
Sun.	19	15. 45	15. 51	57. 49	58. 11	4932	4905
M.	20	15. 57	16. 3	58. 33	58. 55	4877	4850
Tu.	21	16. 9	16. 15	59. 17	59. 37	4823	4799
W.	22	16. 20	16. 25	59. 56	60. 13	4776	4756
Th.	23	16. 28	16. 31	60. 27	60. 38	4739	4726
F.	24	16. 33	16. 34	60. 45	60. 48	4717	4714
Sa.	25	16. 34	16. 33	60. 47	60. 42	4715	4721
Sun.	26	16. 30	16. 26	60. 33	60. 20	4732	4747
M.	27	16. 21	16. 16	60. 3	59. 43	4768	4792
Tu.	28	16. 10	16. 3	59. 20	58. 55	4820	4850
W.	29	15. 56	15. 49	58. 28	58. 0	4884	4918
Th.	30	15. 41	15. 33	57. 32	57. 5	4954	4988
F.	31	15. 26	15. 19	56. 38	56. 12	5022	5055

DISTANCES of the Moon's *Centre* from the Sun, and from Stars *EAST* of her.

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	89. 5. 0	87. 22. 18	85. 40. 4	83. 58. 17	82. 16. 58	80. 36. 5	78. 55. 39	77. 15. 39
	2	75. 36. 5	73. 56. 57	72. 18. 13	70. 39. 55	69. 2. 1	67. 24. 31	65. 47. 25	64. 10. 42
	3	62. 34. 22	60. 58. 24	59. 22. 48	57. 47. 33	56. 12. 39	54. 38. 5	53. 3. 50	51. 29. 54
	4	49. 56. 17	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	1	- - -	120. 43. 46	119. 9. 16	117. 35. 14	116. 1. 39	114. 28. 30	112. 55. 48	111. 23. 51
	2	109. 51. 41	108. 20. 15	106. 49. 15	105. 18. 38	103. 48. 27	102. 18. 40	100. 49. 15	99. 20. 14
	3	97. 51. 36	96. 23. 20	94. 55. 25	93. 27. 51	92. 0. 38	90. 33. 45	89. 7. 12	87. 40. 57
	4	86. 15. 1	84. 49. 23	83. 24. 1	81. 58. 56	80. 34. 8	79. 9. 35	77. 45. 16	76. 21. 12
	5	74. 57. 23	73. 33. 47	72. 10. 23	70. 47. 11	69. 24. 12	68. 1. 23	66. 38. 45	65. 16. 16
	6	63. 53. 57	62. 31. 47	61. 9. 44	59. 47. 50	58. 26. 3	57. 4. 23	55. 42. 50	54. 21. 22
	7	53. 0. 0	51. 38. 43	50. 17. 29	48. 56. 20	47. 35. 15	46. 14. 13	44. 53. 13	43. 32. 16
	8	42. 11. 20	40. 50. 26	39. 29. 33	- - -	- - -	- - -	- - -	- - -
α Arietis.	13	- - -	- - -	- - -	- - -	84. 5. 59	82. 34. 27	81. 2. 46	79. 30. 57
	14	77. 58. 59	76. 26. 52	74. 54. 37	73. 22. 13	71. 49. 41	70. 16. 59	68. 44. 9	67. 11. 9
	15	65. 37. 59	64. 4. 40	62. 31. 12	60. 57. 33	59. 23. 45	57. 49. 46	56. 15. 37	54. 41. 18
	16	53. 6. 48	51. 32. 7	49. 57. 16	48. 22. 14	46. 47. 1	45. 11. 36	43. 36. 1	42. 0. 14
	17	40. 24. 17	38. 48. 9	37. 11. 50	35. 35. 21	33. 58. 42	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	IIIʰ. D. M. S.	VIʰ. D. M. S.	IXʰ. D. M. S.	*Midnight.* D. M. S.	XVʰ. D. M. S.	XVIIIʰ. D. M. S.	XXIʰ. D. M. S.
Aldebaran.	17	- - -	- - -	- - -	- - -	66. 33. 28	64. 57. 22	63. 21. 4	61. 44. 33
	18	60. 7. 50	58. 30. 55	56. 53. 49	55. 16. 32	53. 39. 3	52. 1. 22	50. 23. 32	48. 45. 33
	19	47. 7. 24	45. 29. 5	43. 50. 40	42. 12. 11	40. 33. 36	38. 54. 55	37. 16. 15	35. 37. 38
	20	33. 59. 8	32. 20. 48	30. 42. 40	29. 4. 48	27. 27. 15	- - -	- - -	- - -
Pollux.	20	- - -	- - -	- - -	- - -	68. 20. 50	66. 36. 14	64. 51. 19	63. 6. 5
	21	61. 20. 33	59. 34. 42	57. 48. 34	56. 2. 8	54. 15. 26	52. 28. 25	50. 41. 9	48. 53. 37
	22	47. 5. 50	45. 17. 48	43. 29. 33	41. 41. 7	39. 52. 28	38. 3. 37	36. 14. 38	34. 25. 33
	23	32. 36. 23	30. 47. 10	28. 57. 56	27. 8. 43	25. 19. 32	- - -	- - -	- - -
Regulus.	23	- - -	- - -	- - -	- - -	61. 51. 6	59. 59. 35	58. 7. 55	56. 16. 8
	24	54. 24. 12	52. 32. 10	50. 40. 4	48. 47. 54	46. 55. 40	45. 3. 24	43. 11. 9	41. 18. 54
	25	39. 26. 40	37. 34. 28	35. 42. 22	33. 50. 22	31. 58. 27	30. 6. 40	28. 15. 4	26. 23. 39
	26	24. 32. 25	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	26	78. 33. 41	76. 42. 18	74. 51. 8	73. 0. 10	71. 9. 25	69. 18. 54	67. 28. 40	65. 38. 42
	27	63. 49. 0	61. 59. 36	60. 10. 33	58. 21. 48	56. 33. 24	54. 45. 21	52. 57. 40	51. 10. 22
	28	49. 23. 27	47. 36. 55	45. 50. 48	44. 5. 6	42. 19. 49	40. 34. 58	38. 50. 33	37. 6. [illegible]
	29	35. 23. 5	33. 40. 2	31. 57. 28	30. 15. 22	28. 33. 45	- - -	- - -	- - -
Antares.	29	- - -	- - -	- - -	- - -	74. 14. 2	72. 32. 14	70. 50. 53	69. 9. 58
	30	67. 29. 28	65. 49. 24	64. 9. 45	62. 30. 32	60. 51. 43	59. 13. 19	57. 35. 19	55. 57. 43
	31	54. 20. 31	52. 43. 42	51. 7. 16	49. 31. 12	47. 55. 31	46. 20. 11	44. 45. 13	43. 10. 35
	F.1	41. 36. 19	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	30	- - -	- - -	- - -	- - -	- - -	- - -	121. 1. 3	119. 31. 1
	31	118. 1. 24	116. 32. 10	115. 3. 18	113. 34. 49	112. 6. 42	110. 38. 57	109. 11. 33	107. 44. 30
	F.1	106. 17. 49	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	*Noon.* D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	*Midnight.* D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Pollux.	1	48. 3. 11	49. 45. 9	51. 26. 41	53. 7. 48	54. 48. 29	56. 28. 45	58. 8. 36	59. 48. 3
	2	61. 27. 5	63. 5. 42	64. 43. 56	66. 21. 45	67. 59. 11	- - -	- - -	- - -
Regulus.	2	- - -	- - -	- - -	- - -	30. 58. 5	32. 35. 19	34. 12. 10	35. 48. 39
	3	37. 24. 46	39. 0. 31	40. 35. 57	42. 11. 1	43. 45. 46	45. 20. 11	46. 54. 17	48. 28. 5
	4	50. 1. 35	51. 34. 46	53. 7. 42	54. 40. 20	56. 12. 43	57. 44. 50	59. 16. 43	60. 48. 22
	5	62. 19. 47	63. 50. 58	65. 21. 57	66. 52. 43	68. 23. 18	69. 53. 42	71. 23. 56	72. 54. 0
	6	74. 23. 55	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	6	20. 29. 41	21. 58. 36	23. 27. 28	24. 56. 18	26. 25. 5	27. 53. 49	29. 22. 30	30. 51. 9
	7	32. 19. 45	33. 48. 18	35. 16. 48	36. 45. 17	38. 13. 43	39. 42. 7	41. 10. 30	42. 38. 52
	8	44. 7. 13	45. 35. 34	47. 3. 54	48. 32. 15	50. 0. 36	51. 28. 57	52. 57. 19	54. 25. 42
	9	55. 54. 6	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	15	- - -	- - -	- - -	39. 19. 15	40. 45. 48	42. 12. 33	43. 39. 29	45. 6. 37
	16	46. 33. 57	48. 1. 29	49. 29. 13	50. 57. 10	52. 25. 20	53. 53. 43	55. 22. 20	56. 51. 10
	17	58. 20. 14	59. 49. 32	61. 19. 4	62. 48. 51	64. 18. 53	65. 49. 10	67. 19. 43	68. 50. 32
	18	70. 21. 36	71. 52. 56	73. 24. 33	74. 56. 27	76. 28. 37	78. 1. 5	79. 33. 50	81. 6. 54
	19	82. 40. 15	84. 13. 55	85. 47. 53	87. 22. 10	88. 56. 46	90. 31. 40	92. 6. 54	93. 42. 27
	20	95. 18. 20	96. 54. 32	98. 31. 4	100. 7. 56	101. 45. 7	103. 22. 37	105. 0. 27	106. 38. 37
	21	108. 17. 6	109. 55. 55	111. 35. 3	113. 14. 30	114. 54. 17	116. 34. 22	118. 14. 45	119. 55. 27
	22	121. 36. 27	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Fomalhaut.	19	- - -	- - -	- - -	- - -	61. 33. 52	63. 5. 41	64. 38. 3	66. 11. 0
	20	67. 44. 31	69. 18. 33	70. 53. 5	72. 28. 6	74. 3. 36	75. 39. 33	77. 15. 55	78. 52. 42
	21	80. 29. 53	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Pegasi.	21	58. 12. 51	59. 53. 50	61. 35. 19	63. 17. 16	64. 59. 41	66. 42. 32	68. 25. 48	70. 9. 28
	22	71. 53. 32	73. 37. 58	75. 22. 44	77. 7. 50	78. 53. 16	- - -	- - -	- - -
α Arietis.	22	- - -	- - -	- - -	- - -	35. 43. 2	37. 31. 59	39. 21. 14	41. 10. 48
	23	43. 0. 40	44. 50. 48	46. 41. 11	48. 31. 47	50. 22. 38	52. 13. 41	54. 4. 53	55. 56. 15
	24	57. 47. 47	59. 39. 27	61. 31. 12	63. 23. 3	65. 14. 59	67. 6. 58	68. 58. 59	70. 51. 0
	25	72. 43. 3	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Aldebaran.	25	41. 12. 20	43. 0. 55	44. 49. 41	46. 38. 36	48. 27. 38	50. 16. 45	52. 5. 54	53. 55. 5
	26	55. 44. 14	57. 33. 18	59. 22. 18	61. 11. 12	62. 59. 56	64. 48. 31	66. 36. 54	68. 25. 5
	27	70. 13. 3	72. 0. 46	73. 48. 13	75. 35. 23	77. 22. 14	- - -	- - -	- - -
Pollux.	27	- - -	- - -	- - -	- - -	34. 56. 44	36. 43. 44	38. 30. 27	40. 16. 53
	28	42. 3. 3	43. 48. 54	45. 34. 25	47. 19. 36	49. 4. 27	50. 48. 54	52. 32. 59	54. 16. 40
	29	55. 59. 59	57. 42. 53	59. 25. 22	61. 7. 28	62. 49. 9	64. 30. 25	66. 11. 16	67. 51. 42
	30	69. 31. 44	71. 11. 21	72. 50. 33	74. 29. 20	76. 7. 42	- - -	- - -	- - -
Regulus.	30	- - -	- - -	- - -	- - -	39. 7. 28	40. 45. 40	42. 23. 29	44. 0. 55
	31	45. 37. 57	47. 14. 37	48. 50. 54	50. 26. 50	52. 2. 24	53. 37. 36	55. 12. 28	56. 46. 58
	F. 1	58. 21. 8	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER,

At VI o'Clock in the *Evening*.

1		·4	O	1 :3 2·
2	.1O	2☌4	O	·3
3		·2 1·	O	·4 3·
4			O	3 :1 ·2 ·4
5		3· 1·	O	2· ·4
6		·3 2·	O	·1 ·4
7		·3 ·1	O	·2 4·
8			O	·3 1· 2· 4·
9		2· ·1	O	·3 4·
10	1.●	·2	O	4· 3·
11	4.☌		O	·1 3· ·2
12		3☌4 1·	O	2·
13		4· 3· 2·	O	·1
14		4· ·3. ·1	O	.2O
15		4·	O	1· 2· .3O
16		·4 1☌2	O	·3
17		·4 ·2	O	1· 3·
18		·4	O	2☌3 .1O
19		3·1☌4	O	2·
20		3· 2·	O	1☌4
21		·3 1· ·2	O	·4
22	.3O		O	1· 2· ·4
23	2.●	·1	O	·3 ·4
24		·2	O	1· 3· 4·
25	.1O		O	·2 3· 4·
26	1.●	3·	O	2· 4·
27		3· 2·	O	·1 4·
28		·3 1·2☌4	O	
29		4· ·3	O	1☌2
30	2.●	4· ·1	O	·3
31		4· ·2	O	1· ·3

Days of the Week.	Days of the Month.	Sundays, and other remarkable Days.
Sa.	1	[*B. V. Mary.*
Sun.	2	*Sexagesima Sun. Purif. of*
M.	3	Blas. on mor. of Purif.
Tu.	4	[3 ret.
W.	5	Agatha.
Th.	6	
F.	7	
Sa.	8	
Sun.	9	*Quinquagesima Sunday.*
M.	10	In 8 days of Purif. 4 ret.
Tu.	11	*Shrove Tuesday.*
W.	12	*Ash Wednesday.* Hil. T.
Th.	13	[ends.
F.	14	Valentine.
Sa.	15	Camb. Term div. m.
Sun.	16	1st *Sunday in Lent.*
M.	17	
Tu.	18	
W.	19	
Th.	20	
F.	21	
Sa.	22	
Sun.	23	2d *Sunday in Lent.*
M.	24	*St. Matthias. D. of Camb. b.*
Tu.	25	
W.	26	
Th.	27	
F.	28	

Phases of the MOON.

	D. H. M.
☾ *Last Quarter*	2. 10. 34
● New Moon	10. 15. 5
☽ *First Quarter* . . .	17. 23. 2
○ Full Moon	24. 17. 6

Other *Phenomena.*

D. H. M.	
4. - -	♀ ♂, ♀ 24¾′ S. of ♂.
4. 10. 29	☽ α ♏.
9. - -	☿ Stationary.
10. - -	⊙ eclipsed, invisible.
11. 17. 27	☽ ☿.
18. 21. 33	⊙ enters ♓.

Days of the Week.	Days of the Month.	The SUN's Longitude.	The SUN's Rt. Ascen. in Time.	The SUN's Declin. South.	Diff.	Equation of Time. Add to app. Time.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	M. S.	S.
Sa.	1	10. 11. 54. 3	20. 57. 28, 2	17. 14. 23		13. 53, 0	
Sun.	2	10. 12. 54. 54	21. 1. 32, 6	16. 57. 17	17. 6	14. 0, 8	7, 8
M.	3	10. 13. 55. 43	21. 5. 36, 1	16. 39. 54	17. 23	14. 7, 8	7, 0
Tu.	4	10. 14. 56. 32	21. 9. 38, 9	16. 22. 13	17. 41	14. 14, 0	6, 2
W.	5	10. 15. 57. 20	21. 13. 40, 9	16. 4. 15	17. 58	14. 19, 4	5, 4
Th.	6	10. 16. 58. 7	21. 17. 42, 0	15. 46. 0	18. 15	14. 24, 0	4, 6
F.	7	10. 17. 58. 53	21. 21. 42, 4	15. 27. 29	18. 31	14. 27, 8	3, 8
Sa.	8	10. 18. 59. 38	21. 25. 42, 0	15. 8. 43	18. 46	14. 30, 8	3, 0
Sun.	9	10. 20. 0. 21	21. 29. 40, 7	14. 49. 41	19. 2	14. 33, 0	2, 2
M.	10	10. 21. 1. 3	21. 33. 38, 7	14. 30. 24	19. 17	14. 34, 5	1, 5
Tu.	11	10. 22. 1. 44	21. 37. 35, 9	14. 10. 52	19. 32	14. 35, 1	0, 6
W.	12	10. 23. 2. 23	21. 41. 32, 4	13. 51. 7	19. 45	14. 35, 0	0, 1
Th.	13	10. 24. 3. 0	21. 45. 28, 0	13. 31. 8	19. 59	14. 34, 1	0, 9
F.	14	10. 25. 3. 37	21. 49. 22, 9	13. 10. 56	20. 12	14. 32, 4	1, 7
Sa.	15	10. 26. 4. 11	21. 53. 17, 0	12. 50. 31	20. 25	14. 30, 0	2, 4
Sun.	16	10. 27. 4. 43	21. 57. 10, 4	12. 29. 53	20. 38	14. 26, 8	3, 2
M.	17	10. 28. 5. 14	22. 1. 3, 0	12. 9. 4	20. 49	14. 22, 9	3, 9
Tu.	18	10. 29. 5. 42	22. 4. 54, 9	11. 48. 4	21. 0	14. 18, 2	4, 7
W.	19	11. 0. 6. 9	22. 8. 46, 1	11. 26. 52	21. 12	14. 12, 9	5, 3
Th.	20	11. 1. 6. 34	22. 12. 36, 5	11. 5. 30	21. 22	14. 6, 8	6, 1
F.	21	11. 2. 6. 56	22. 16. 26, 3	10. 43. 58	21. 32	14. 0, 0	6, 8
Sa.	22	11. 3. 7. 16	22. 20. 15, 4	10. 22. 16	21. 42	13. 52, 5	7, 5
Sun.	23	11. 4. 7. 35	22. 24. 3, 8	10. 0. 24	21. 52	13. 44, 5	8, 0
M.	24	11. 5. 7. 52	22. 27. 51, 6	9. 38. 23	22. 1	13. 35, 7	8, 8
Tu.	25	11. 6. 8. 7	22. 31. 38, 8	9. 16. 14	22. 9	13. 26, 4	9, 3
W.	26	11. 7. 8. 20	22. 35. 25, 4	8. 53. 57	22. 17	13. 16, 5	9, 9
Th.	27	11. 8. 8. 32	22. 39. 11, 5	8. 31. 31	22. 26	13. 6, 0	10, 5
F.	28	11. 9. 8. 42	22. 42. 57, 0	8. 8. 59	22. 32	12. 55, 0	11, 0

Days	Time of ☉'s Semidiam. passing Merid.	THE SUN's Semi-diameter.	THE SUN's Hourly Motion.	THE SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8, 1	16. 15, 3	2. 32, 1	9. 993753	10. 6. 39
7	1. 7, 4	16. 14, 3	2. 31, 9	9. 994208	10. 6. 20
13	1. 6, 7	16. 13, 2	2. 31, 5	9. 994709	10. 6. 0
19	1. 6, 1	16. 12, 0	2. 31, 1	9. 995248	10. 5. 41
25	1. 5, 5	16. 10, 6	2. 30, 7	9. 995843	10. 5. 22

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite. Emersions. Days.	I. Satellite. Emersions. H. M. S.	II. Satellite. Emersions. Days.	II. Satellite. Emersions. H. M. S.	III. Satellite. Days.	III. Satellite. H. M. S.
*2	8. 5. 28	2	22. 42. 11	*2	5. 35. 45 Im.
4	2. 34. 28	*6	12. 0. 28	*2	7. 57. 29 E.
5	21. 3. 21	9	22. 43. 32 Im.	*9	9. 37. 46 Im.
7	15. 32. 21	10	1. 18. 39 E.	*9	12. 0. 23 E.
*9	10. 1. 15	*13	12. 1. 43 Im.	16	13. 38. 57 Im.
11	4. 30. 15	13	14. 36. 50 E.	16	16. 2. 28 E.
12	22. 59. 10	17	1. 19. 50 Im.	23	17. 40. 7 Im.
14	17. 28. 10	17	3. 55. 0 E.	23	20. 4. 32 E.
*16	11. 57. 4	20	14. 37. 56 Im.		
*18	6. 26. 5	20	17. 13. 6 E.		
20	0. 55. 0	24	3. 56. 2 Im.		
21	19. 24. 1	*24	6. 31. 13 E.		
23	13. 52. 55	27	17. 14. 2 Im.		
*25	8. 21. 56	27	19. 49. 15 E.		
27	2. 50. 51			IV. Satellite.	
28	21. 19. 52				

THE PLANETS'

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Rt. Asc. *in Time.*	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
	☿ Gr. Elong. 4^d.		***MERCURY.***			Inf. ☌ 18^d. 19$\frac{1}{2}^h$.	
1	1. 14. 53	0. 10 S	10. 29. 52	0. 3 S	11. 34 S	22. 8	1. 10
4	2. 3. 21	2. 4 N	11. 3. 10	0. 41 N	9. 43	22. 19	1. 10
7	2. 22. 16	4. 8	11. 5. 19	1. 30	8. 11	22. 26	1. 4
10	3. 10. 59	5. 44	11. 6. 1	2. 19	7. 10	22. 28	0. 54
13	3. 28. 54	6. 41	11. 5. 7	3. 2	6. 49	22. 23	0. 38
16	4. 15. 34	7. 0	11. 2. 51	3. 32	7. 8	22. 14	0. 17
19	5. 0. 49	6. 47	10. 29. 43	3. 44	8. 5	22. 2	23. 45
22	5. 14. 39	6. 10	10. 26. 26	3. 36	9. 20	21. 50	23. 23
25	5. 27. 13	5. 18	10. 23. 42	3. 9	10. 38	21. 40	23. 3
28	6. 8. 42	4. 17	10. 21. 54	2. 34	11. 57	21. 34	22. 47
	♀		***VENUS.***				
1	11. 4. 18	3. 20 S	10. 21. 23	1. 27 S	15. 45 S	21. 37	0. 40
7	11. 13. 49	3. 24	10. 28. 54	1. 29	13. 15	22. 6	0. 45
13	11. 23. 21	3. 21	11. 6. 25	1. 28	10. 32	22. 35	0. 49
19	0. 2. 54	3. 14	11. 13. 54	1. 25	7. 39	23. 3	0. 54
25	0. 12. 27	3. 1	11. 21. 23	1. 20	4. 39	23. 30	0. 59
	♂		***MARS.***				
1	11. 1. 17	1. 48 S	10. 23. 14	1. 4 S	14. 48 S	21. 44	0. 46
7	11. 5. 5	1. 46	10. 27. 58	1. 3	13. 10	22. 2	0. 40
13	11. 8. 53	1. 44	11. 2. 43	1. 1	11. 28	22. 20	0. 35
19	11. 12. 41	1. 41	11. 7. 27	0. 59	9. 42	22. 38	0. 29
25	11. 16. 29	1. 38	11. 12. 10	0. 57	7. 53	22. 56	0. 24
	♃		***JUPITER.***			□ 16^d. 14$\frac{3}{4}^h$.	
1	2. 7. 35	0. 41 S	1. 26. 43	0. 44 S	18. 44 N	3. 38	6. 40
7	2. 8. 6	0. 40	1. 26. 59	0. 42	18. 49	3. 39	6. 17
13	2. 8. 38	0. 40	1. 27. 23	0. 41	18. 56	3. 41	5. 55
19	2. 9. 10	0. 39	1. 27. 54	0. 39	19. 4	3. 43	5. 34
25	2. 9. 41	0. 38	1. 28. 30	0. 38	19. 14	3. 46	5. 13
	♄		***SATURN.***				
1	1. 10. 3	2. 23 S	1. 3. 56	2. 21 S	10. 38 N	2. 10	5. 12
7	1. 10. 16	2. 23	1. 4. 16	2. 20	10. 46	2. 11	4. 49
13	1. 10. 29	2. 22	1. 4. 39	2. 18	10. 55	2. 13	4. 27
19	1. 10. 42	2. 22	1. 5. 5	2. 17	11. 5	2. 14	4. 5
25	1. 10. 55	2. 22	1. 5. 34	2. 15	11. 16	2. 16	3. 44
	♅		***GEORGIAN.***				
1	9. 7. 52	0. 19 S	9. 9. 25	0. 19 S	23. 26 S	18. 41	21. 40
11	9. 7. 58	0. 20	9. 9. 55	0. 19	23. 24	18. 43	21. 2
21	9. 8. 5	0. 20	9. 10. 22	0. 19	23. 23	18. 45	20. 26

Days of the Week.	Days of the Month.	The MOON's Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Sa.	1	6. 25. 32. 6	7. 1. 47. 36	5. 11. 23 S	5. 16. 15 S
Sun.	2	7. 7. 58. 26	7. 14. 5. 10	5. 17. 23	5. 14. 54
M.	3	7. 20. 8. 22	7. 26. 8. 39	5. 8. 55	4. 59. 36
Tu.	4	8. 2. 6. 35	8. 8. 2. 46	4. 47. 7	4. 31. 36
W.	5	8. 13. 57. 46	8. 19. 52. 11	4. 13. 15	3. 52. 14
Th.	6	8. 25. 46. 30	9. 1. 41. 16	3. 28. 45	3. 3. 1
F.	7	9. 7. 36. 55	9. 13. 33. 56	2. 35. 15	2. 5. 42
Sa.	8	9. 19. 32. 41	9. 25. 33. 31	1. 34. 38	1. 2. 21 S
Sun.	9	10. 1. 36. 46	10. 7. 42. 41	0. 29. 10 S	0. 4. 35 N
M.	10	10. 13. 51. 30	10. 20. 3. 21	0. 38. 32 N	1. 12. 17
Tu.	11	10. 26. 18. 24	11. 2. 36. 45	1. 45. 27	2. 17. 35
W.	12	11. 8. 58. 28	11. 15. 23. 33	2. 48. 16	3. 17. 5
Th.	13	11. 21. 52. 3	11. 28. 23. 56	3. 43. 38	4. 7. 29
F.	14	0. 4. 59. 11	0. 11. 37. 46	4. 28. 15	4. 45. 35
Sa.	15	0. 18. 19. 39	0. 25. 4. 47	4. 59. 11	5. 8. 45
Sun.	16	1. 1. 53. 6	1. 8. 44. 35	5. 14. 4	5. 14. 57
M.	17	1. 15. 39. 7	1. 22. 36. 38	5. 11. 19	5. 3. 5
Tu.	18	1. 29. 37. 2	2. 6. 40. 9	4. 50. 19	4. 33. 5
W.	19	2. 13. 45. 49	2. 20. 53. 49	4. 11. 35	3. 46. 5
Th.	20	2. 28. 3. 52	3. 5. 15. 38	3. 16. 55	2. 44. 31
F.	21	3. 12. 28. 42	3. 19. 42. 37	2. 9. 25	1. 32. 11
Sa.	22	3. 26. 56. 50	4. 4. 10. 47	0. 53. 27 N	0. 13. 54 N
Sun.	23	4. 11. 23. 50	4. 18. 35. 19	0. 25. 44 S	1. 4. 49 S
M.	24	4. 25. 44. 33	5. 2. 50. 53	1. 42. 36	2. 18. 31
Tu.	25	5. 9. 53. 42	5. 16. 52. 28	2. 51. 59	3. 22. 29
W.	26	5. 23. 46. 39	6. 0. 35. 51	3. 49. 39	4. 13. 11
Th.	27	6. 7. 19. 46	6. 13. 58. 15	4. 32. 51	4. 48. 32
F.	28	6. 20. 31. 15	6. 26. 58. 47	5. 0. 12	5. 7. 51

THE MOON's

Days of the Month.	Age.	Pass. Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	22	17. 1	201. 42. 35	207. 43. 1	14. 42. 33 S	17. 2. 52 S
2	23	17. 47	213. 47. 31	219. 56. 56	19. 10. 46	21. 5. 11
3	24	18. 36	226. 11. 46	232. 32. 10	22. 45. 5	24. 9. 30
4	25	19. 25	238. 57. 53	245. 28. 16	25. 17. 31	26. 8. 21
5	26	20. 16	252. 2. 21	258. 38. 51	26. 41. 24	26. 56. 11
6	27	21. 6	265. 16. 16	271. 53. 0	26. 52. 28	26. 30. 14
7	28	21. 56	278. 27. 29	284. 58. 16	25. 49. 43	24. 51. 24
8	29	22. 44	291. 24. 13	297. 44. 29	23. 36. 0	22. 4. 25
9	30	23. 30	303. 58. 35	310. 6. 26	20. 17. 45	18. 17. 14
10	1	0	316. 8. 16	322. 4. 39	16. 4. 12	13. 40. 7
11	2	0. 15	327. 56. 28	333. 44. 53	11. 6. 28	8. 24. 49
12	3	0. 58	339. 31. 12	345. 16. 55	5. 36. 47 S	2. 44. 1 S
13	4	1. 42	351. 3. 41	356. 53. 17	0. 11. 46 N	3. 8. 46 N
14	5	2. 26	2. 47. 34	8. 48. 26	6. 5. 7	8. 58. 51
15	6	3. 13	14. 57. 47	21. 17. 29	11. 47. 53	14. 29. 59
16	7	4. 3	27. 49. 11	34. 34. 18	17. 2. 45	19. 23. 40
17	8	4. 57	41. 33. 48	48. 48. 0	21. 30. 7	23. 19. 22
18	9	5. 55	56. 16. 25	63. 57. 40	24. 48. 45	25. 55. 46
19	10	6. 56	71. 49. 20	79. 48. 9	26. 38. 17	26. 54. 39
20	11	7. 59	87. 50. 10	95. 51. 11	26. 43. 56	26. 5. 59
21	12	9. 0	103. 47. 8	111. 34. 33	25. 1. 33	23. 32. 7
22	13	9. 59	119. 10. 48	126. 34. 15	21. 39. 52	19. 27. 29
23	14	10. 54	133. 44. 13	140. 40. 51	16. 58. 0	14. 14. 37
24	15	11. 45	147. 24. 58	153. 57. 52	11. 20. 33	8. 18. 55
25	16	12. 34	160. 21. 11	166. 36. 44	5. 12. 41 N	2. 4. 42 N
26	17	13. 21	172. 46. 21	178. 51. 53	1. 2. 27 S	4. 6. 27 S
27	18	14. 7	184. 55. 7	190. 57. 44	7. 5. 10	9. 56. 40
28	19	14. 53	197. 1. 15	203. 6. 57	12. 39. 12	15. 11. 10

Days of the Week.	Days of the Month.	THE MOON'S. Semidiameter. Noon. M. S.	Semidiameter. Midn. M. S.	Hor. Parallax. Noon. M. S.	Hor. Parallax. Midn. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
Sa.	1	15. 13	15. 7	55. 49	55. 28	5085	5112
Sun.	2	15. 2	14. 57	55. 9	54. 52	5137	5160
M.	3	14. 53	14. 50	54. 37	54. 25	5179	5195
Tu.	4	14. 47	14. 45	54. 16	54. 10	5207	5215
W.	5	14. 44	14. 44	54. 5	54. 3	5222	5225
Th.	6	14. 44	14. 45	54. 4	54. 6	5223	5221
F.	7	14. 46	14. 47	54. 11	54. 16	5214	5207
Sa.	8	14. 49	14. 52	54. 24	54. 34	5197	5183
Sun.	9	14. 55	14. 58	54. 44	54. 56	5170	5154
M.	10	15. 1	15. 5	55. 8	55. 21	5139	5122
Tu.	11	15. 8	15. 12	55. 34	55. 48	5105	5086
W.	12	15. 16	15. 20	56. 2	56. 17	5068	5049
Th.	13	15. 24	15. 28	56. 32	56. 46	5030	5012
F.	14	15. 32	15. 36	57. 1	57. 16	4993	4974
Sa.	15	15. 40	15. 44	57. 31	57. 46	4955	4936
Sun.	16	15. 48	15. 52	58. 0	58. 15	4918	4900
M.	17	15. 56	16. 0	58. 30	58. 44	4881	4864
Tu.	18	16. 4	16. 8	58. 58	59. 11	4847	4831
W.	19	16. 11	16. 14	59. 23	59. 34	4816	4803
Th.	20	16. 16	16. 18	59. 43	59. 50	4792	4783
F.	21	16. 20	16. 20	59. 55	59. 57	4777	4775
Sa.	22	16. 20	16. 19	59. 57	59. 53	4775	4780
Sun.	23	16. 17	16. 14	59. 46	59. 36	4788	4800
M.	24	16. 11	16. 7	59. 23	59. 8	4816	4834
Tu.	25	16. 2	15. 57	58. 51	58. 31	4855	4880
W.	26	15. 51	15. 44	58. 9	57. 46	4907	4936
Th.	27	15. 38	15. 32	57. 23	57. 0	4965	4994
F.	28	15. 25	15. 19	56. 37	56. 14	5023	5053

DISTANCES of the Moon's *Centre* from the Sun, and from Stars *EAST* of her.

Stars' Names.	Days	Noon.	III^{h}.	VI^{h}.	IX^{h}.	Midnight.	XV^{h}.	XVIII^{h}.	XXI^{h}.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	41. 36. 20	40. 2. 22	38. 28. 43	36. 55. 23	35. 22. 22	33. 49. 38	32. 17. 11	30. 45. 0
	2	29. 13. 6	27. 41. 27	26. 10. 2	24. 38. 51	23. 7. 55	- - -	- - -	- - -
The Sun.	1	106. 17. 49	104. 51. 26	103. 25. 21	101. 59. 36	100. 34. 9	99. 9. 0	97. 44. 7	96. 19. 31
	2	94. 55. 12	93. 31. 8	92. 7. 17	90. 43. 41	89. 20. 19	87. 57. 10	86. 34. 12	85. 11. 26
	3	83. 48. 52	82. 26. 28	81. 4. 13	79. 42. 7	78. 20. 11	76. 58. 23	75. 36. 41	74. 15. 7
	4	72. 53. 39	71. 32. 17	70. 10. 59	68. 49. 46	67. 28. 38	66. 7. 33	64. 46. 30	63. 25. 29
	5	62. 4. 31	60. 43. 33	59. 22. 36	58. 1. 39	56. 40. 43	55. 19. 45	53. 58. 46	52. 37. 45
	6	51. 16. 43	49. 55. 37	48. 34. 27	47. 13. 14	45. 51. 58	44. 30. 37	43. 9. 11	41. 47. 41
	7	40. 26. 5	39. 4. 23	- - -	- - -	- - -	- - -	- - -	- - -
Aldebaran.	13	75. 55. 14	74. 19. 11	72. 42. 58	71. 6. 36	69. 30. 5	67. 53. 25	66. 16. 36	64. 39. 40
	14	63. 2. 35	61. 25. 22	59. 48. 2	58. 10. 35	56. 33. 2	54. 55. 22	53. 17. 37	51. 39. 48
	15	50. 1. 54	48. 23. 55	46. 45. 56	45. 7. 55	43. 29. 54	41. 51. 51	40. 13. 54	38. 36. 2
	16	36. 58. 16	35. 20. 41	33. 43. 16	32. 6. 6	30. 29. 12	- - -	- - -	- - -
Pollux.	16	- - -	- - -	- - -	- - -	71. 36. 7	69. 53. 41	68. 11. 3	66. 28. 15
	17	64. 45. 16	63. 2. 6	61. 18. 46	59. 35. 16	57. 51. 35	56. 7. 43	54. 23. 42	52. 39. 31
	18	50. 55. 11	49. 10. 41	47. 26. 3	45. 41. 16	43. 56. 22	42. 11. 19	40. 26. 11	38. 40. 57
	19	36. 55. 37	35. 10. 14	33. 24. 47	31. 39. 19	29. 53. 49	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Regulus.	19	- - -	- - -	- - -	- - -	66. 30. 15	64. 43. 1	62. 55. 39	61. 8. 8
	20	59. 20. 28	57. 32. 40	55. 44. 46	53. 56. 44	52. 8. 36	50. 20. 21	48. 32. 2	46. 43. 38
	21	44. 55. 9	43. 6. 35	41. 18. 0	39. 29. 21	37. 40. 41	35. 52. 0	34. 3. 19	32. 14. 38
	22	30. 25. 59	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	22	84. 28. 11	82. 39. 21	80. 50. 33	79. 1. 48	77. 13. 4	75. 24. 24	73. 35. 48	71. 47. 18
	23	69. 58. 52	68. 10. 32	66. 22. 21	64. 34. 17	62. 46. 22	60. 58. 36	59. 11. 1	57. 23. 38
	24	55. 36. 25	53. 49. 25	52. 2. 38	50. 16. 6	48. 29. 47	46. 43. 44	44. 57. 57	43. 12. 27
	25	41. 27. 14	39. 42. 18	37. 57. 43	36. 13. 26	34. 29. 30	32. 45. 54	31. 2. 41	29. 19. 51
	26	27. 37. 24	25. 55. 22	24. 13. 46	22. 32. 37	20. 51. 54	- - -	- - -	- - -
Antares.	26	- - -	- - -	- - -	- - -	66. 28. 47	64. 47. 27	63. 6. 28	61. 25. 51
	27	59. 45. 35	58. 5. 41	56. 26. 8	54. 46. 57	53. 8. 7	51. 29. 39	49. 51. 32	48. 13. 47
	28	46. 36. 23	44. 59. 20	43. 22. 38	41. 46. 17	40. 10. 17	38. 34. 37	36. 59. 16	35. 24. 16
	M.1	33. 49. 35	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Regulus.	1	58. 21. 8	59. 54. 59	61. 28. 32	63. 1. 46	64. 34. 42	66. 7. 20	67. 39. 42	69. 11. 48
	2	70. 43. 37	72. 15. 11	73. 46. 31	75. 17. 37	76. 48. 29	- - -	- - -	- - -
Spica ♍.	2	- - -	- - -	- - -	- - -	22. 53. 3	24. 22. 59	25. 52. 48	27. 22. 29
	3	28. 52. 3	30. 21. 30	31. 50. 50	33. 20. 4	34. 49. 11	36. 18. 11	37. 47. 6	39. 15. 56
	4	40. 44. 40	42. 13. 19	43. 41. 55	45. 10. 27	46. 38. 56	48. 7. 22	49. 35. 46	51. 4. 9
	5	52. 32. 30	54. 0. 51	55. 29. 12	56. 57. 33	58. 25. 55	59. 54. 18	61. 22. 42	62. 51. 9
	6	64. 19. 38	65. 48. 10	67. 16. 46	68. 45. 26	70. 14. 9	71. 42. 57	73. 11. 50	74. 40. 49
	7	76. 9. 54	77. 39. 5	79. 8. 22	80. 37. 47	82. 7. 19	- - -	- - -	- - -
The Sun.	14	40. 8. 2	41. 39. 33	43. 11. 16	44. 43. 10	46. 15. 16	47. 47. 33	49. 20. 1	50. 52. 41
	15	52. 25. 32	53. 58. 34	55. 31. 48	57. 5. 13	58. 38. 49	60. 12. 36	61. 46. 35	63. 20. 45
	16	64. 55. 7	66. 29. 41	68. 4. 26	69. 39. 23	71. 14. 32	72. 49. 51	74. 25. 22	76. 1. 5
	17	77. 36. 59	79. 13. 6	80. 49. 23	82. 25. 52	84. 2. 34	85. 39. 27	87. 16. 31	88. 53. 46
	18	90. 31. 13	92. 8. 51	93. 46. 41	95. 24. 41	97. 2. 53	98. 41. 15	100. 19. 48	101. 58. 32
	19	103. 37. 26	105. 16. 31	106. 55. 45	108. 35. 9	110. 14. 43	111. 54. 26	113. 34. 17	115. 14. 17
	20	116. 54. 26	118. 34. 42	120. 15. 6	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
α Arietis.	18	24. 44. 48	26. 28. 9	28. 11. 53	29. 55. 57	31. 40. 21	33. 25. 5	35. 10. 5	36. 55. 22
	19	38. 40. 56	40. 26. 43	42. 12. 44	43. 58. 58	45. 45. 26	47. 32. 5	49. 18. 55	51. 5. 55
	20	52. 53. 7	54. 40. 28	56. 27. 58	58. 15. 37	60. 3. 24	61. 51. 18	63. 39. 19	65. 27. 26
	21	67. 15. 39	69. 3. 57	70. 52. 20	72. 40. 46	74. 29. 17	- - -	- - -	- - -
Aldebaran.	21	- - -	- - -	- - -	- - -	42. 54. 46	44. 40. 14	46. 25. 56	48. 11. 48
	22	49. 57. 53	51. 44. 6	53. 30. 25	55. 16. 50	57. 3. 20	58. 49. 52	60. 36. 24	62. 22. 56
	23	64. 9. 29	65. 55. 59	67. 42. 24	69. 28. 45	71. 15. 1	73. 1. 11	74. 47. 11	76. 33. 4
	24	78. 18. 47	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	24	35. 53. 15	37. 39. 14	39. 25. 6	41. 10. 49	42. 56. 23	44. 41. 47	46. 26. 58	48. 11. 57
	25	49. 56. 44	51. 41. 15	53. 25. 31	55. 9. 31	56. 53. 16	58. 36. 43	60. 19. 51	62. 2. 42
	26	63. 45. 14	65. 27. 26	67. 9. 19	68. 50. 52	70. 32. 5	72. 12. 37	73. 53. 29	75. 33. 40
	27	77. 13. 29	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	27	40. 13. 24	41. 53. 7	43. 32. 30	45. 11. 31	46. 50. 11	48. 28. 30	50. 6. 28	51. 44. 5
	28	53. 21. 22	54. 58. 17	56. 34. 52	58. 11. 6	59. 47. 0	61. 22. 34	62. 57. 48	64. 32. 43
	M. 1	66. 7. 18	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, at VII o'Clock in the *Evening*.

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
Sa.	1	David.
Sun.	2	*3d Sund. in Lent.* Chad.
M.	3	
Tu.	4	
W.	5	
Th.	6	
F.	7	Perpetua.
Sa.	8	
Sun.	9	*4th Sund. in Lent. Mid L.* [*Sunday.*
M.	10	
Tu.	11	
W.	12	Gregory Martyr.
Th.	13	
F.	14	
Sa.	15	
Sun.	16	*5th Sunday in Lent.*
M.	17	
Tu.	18	Edw. K. of West Saxons.
W.	19	
Th.	20	
F.	21	Camb. Term ends. Bene-
Sa.	22	Oxford Term ends. [dict.
Sun.	23	*6th Sund. in Lent. Palm* [*Sunday.*
M.	24	
Tu.	25	*Annun. of B. V. Mary.*
W.	26	
Th.	27	
F.	28	*Good Friday.*
Sa.	29	
Sun.	30	*Easter Day.*
M.	31	*Easter Monday.*

Phases of the MOON.

	D.	H. M.
☾ *Last Quarter*	4.	6. 48
● New Moon	12.	6. 34
☽ *First Quarter*	19.	6. 18
☉ Full Moon	26.	5. 41

Other *Phenomena.*

D. H. M.	
3. 18. 27	☽ α ♏.
4. - -	☿ Stationary.
6. 14. 29	☽ ♅.
10. 1. 39	☽ ☿.
20. 21. 49	☉ enters ♈.
31. 2. 57	☽ α ♏.

Days of the Week.	Days of the Month.	The Sun's Longitude.	The Sun's Rt. Ascen. in Time.	The Sun's Declin. South.	Diff.	Equation of Time. *Add to app. Time.*	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	M. S.	S.
Sa.	1	11. 10. 8. 49	22. 46. 41, 9	7. 46. 18	22. 47	12. 43, 4	12, 0
Sun.	2	11. 11. 8. 56	22. 50. 26, 4	7. 23. 31	22. 53	12. 31, 4	12, 6
M.	3	11. 12. 9. 1	22. 54. 10, 4	7. 0. 38	22. 59	12. 18, 8	13, 0
Tu.	4	11. 13. 9. 5	22. 57. 53, 9	6. 37. 39	23. 5	12. 5, 8	13, 4
W.	5	11. 14. 9. 7	23. 1. 37, 0	6. 14. 34	23. 11	11. 52, 4	13, 9
Th.	6	11. 15. 9. 7	23. 5. 19, 6	5. 51. 23	23. 15	11. 38, 5	14, 3
F.	7	11. 16. 9. 6	23. 9. 1, 9	5. 28. 8	23. 19	11. 24, 2	14, 6
Sa.	8	11. 17. 9. 3	23. 12. 43, 7	5. 4. 49	23. 24	11. 9, 6	15, 1
Sun.	9	11. 18. 8. 58	23. 16. 25, 2	4. 41. 25	23. 27	10. 54, 5	15, 3
M.	10	11. 19. 8. 52	23. 20. 6, 3	4. 17. 58	23. 31	10. 39, 2	15, 8
Tu.	11	11. 20. 8. 44	23. 23. 47, 1	3. 54. 27	23. 33	10. 23, 4	16, 0
W.	12	11. 21. 8. 34	23. 27. 27, 6	3. 30. 54	23. 36	10. 7, 4	16, 4
Th.	13	11. 22. 8. 22	23. 31. 7, 7	3. 7. 18	23. 38	9. 51, 0	16, 6
F.	14	11. 23. 8. 8	23. 34. 47, 6	2. 43. 40	23. 39	9. 34, 4	16, 9
Sa.	15	11. 24. 7. 51	23. 38. 27, 2	2. 20. 1	23. 41	9. 17, 5	17, 2
Sun.	16	11. 25. 7. 33	23. 42. 6, 5	1. 56. 20	23. 42	9. 0, 3	17, 4
M.	17	11. 26. 7. 12	23. 45. 45, 6	1. 32. 38	23. 42	8. 42, 9	17, 6
Tu.	18	11. 27. 6. 49	23. 49. 24, 5	1. 8. 56	23. 42	8. 25, 3	17, 9
W.	19	11. 28. 6. 24	23. 53. 3, 2	0. 45. 14	23, 42	8. 7, 4	18, 0
Th.	20	11. 29. 5. 56	23. 56. 41, 6	0. 21. 32	23. 42	7. 49, 4	18, 2
				North.			
F.	21	0. 0. 5. 26	0. 0. 19, 9	0. 2. 10	23. 40	7. 31, 2	18, 3
Sa.	22	0. 1. 4. 53	0. 3. 58, 1	0. 25. 50	23. 39	7. 12, 9	18, 5
Sun.	23	0. 2. 4. 18	0. 7. 36, 1	0. 49. 29	23. 38	6. 54, 4	18, 6
M.	24	0. 3. 3. 41	0. 11. 14, 1	1. 13. 7	23. 35	6. 35, 8	18, 6
Tu.	25	0. 4. 3. 2	0. 14. 52, 0	1. 36. 42	23. 33	6. 17, 2	18, 6
W.	26	0. 5. 2. 20	0. 18. 29, 8	2. 0. 15	23. 31	5. 58, 6	18, 7
Th.	27	0. 6. 1. 37	0. 22. 7, 6	2. 23. 46	23. 28	5. 39, 9	18, 7
F.	28	0. 7. 0. 51	0. 25. 45, 4	2. 47. 14	23. 24	5. 21, 2	18, 7
Sa.	29	0. 8. 0. 4	0. 29. 23, 3	3. 10. 38	23. 21	5. 2, 5	18, 6
Sun.	30	0. 8. 59. 14	0. 33. 1, 2	3. 33. 59	23. 16	4. 43, 9	18, 5
M.	31	0. 9. 58. 23	0. 36. 39, 1	3. 57. 15		4. 25, 4	

Days	Time of ☉'s Semidiam. passing Merid.	The Sun's Semi-diameter.	The Sun's Hourly Motion.	The Sun's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 5, 2	16. 9, 6	2. 30, 4	9. 996278	10. 5. 10
7	1. 4, 8	16. 8, 1	2. 29, 9	9. 996971	10. 4. 51
13	1. 4, 5	16. 6, 6	2. 29, 4	9. 997685	10. 4. 32
19	1. 4, 3	16. 4, 9	2. 28, 9	9. 998399	10. 4. 12
25	1. 4, 2	16. 3, 3	2. 28, 4	9. 999126	10. 3. 53

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
Emersions.					
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
2	15. 48. 47	*3	6. 32. 4 Im.	2	21. 40. 54 Im.
*4	10. 17. 48	*3	9. 7. 18 E.	3	0. 0. 9 E.
6	4. 46. 43	6	19. 50. 0 Im.	10	1. 41. 39 Im.
7	23. 15. 44	6	22. 25. 18 E.	10	4. 6. 53 E.
9	17. 44. 38	*10	9. 7. 56 Im.	17	5. 42. 58 Im.
11	12. 13. 40	10	11. 43. 15 E.	*17	8. 10. 6 E.
13	6. 42. 34	13	22. 25. 49 Im.	*24	9. 44. 7 Im.
15	1. 11. 36	14	1. 1. 11 E.	24	12. 12. 13 E.
16	19. 40. 30	17	11. 43. 40 Im.	31	13. 45. 59 Im.
18	14. 9. 32	17	14. 19. 6 E.	31	16. 14. 58 E.
*20	8. 38. 25	21	1. 1. 28 Im.		
22	3. 7. 27	21	3. 36. 57 E.		
23	21. 36. 19		*Emersions.*		
25	16. 5. 21	24	16. 54. 48	IV. Satellite.	
*27	10. 34. 13	28	6. 12. 36		
29	5. 3. 15	31	19. 30. 26		
30	23. 32. 6				

THE PLANETS'

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Rt. Asc. *in Time.*	Passage Merid.
	S. D. M.	D.M.	S. D. M.	D.M.	D.M.	H. M.	H. M.
☿			*MERCURY.*			Gr. Elong. 16ᵈ.	
1	6. 12. 19	3. 55 N	10. 21. 32	2. 21 N	12. 7 S	21. 33	22. 42
4	6. 22. 38	2. 49	10. 21. 7	1. 40	12. 54	21. 32	22. 31
7	7. 2. 17	1. 42	10. 21. 38	0. 59	13. 23	21. 35	22. 24
10	7. 11. 25	0. 35 N	10. 22. 57	0. 20 N	13. 34	21. 41	22. 20
13	7. 20. 9	0. 29 S	10. 24. 57	0. 16 S	13. 28	21. 49	22. 18
16	7. 28. 38	1. 31	10. 27. 29	0. 47	13. 6	22. 0	22. 18
19	8. 6. 56	2. 29	11. 0. 28	1. 14	12. 29	22. 12	22. 20
22	8. 15. 11	3. 24	11. 3. 49	1. 37	11. 38	22. 25	22. 22
25	8. 23. 26	4. 15	11. 7. 30	1. 56	10. 34	22. 40	22. 26
28	9. 1. 49	5. 1	11. 11. 28	2. 11	9. 17	22. 55	22. 31
31	9. 10. 24	5. 41	11. 15. 41	2. 21	7. 49	23. 11	22. 36
♀			*VENUS.*				
1	0. 18. 50	2. 49 S	11. 26. 21	1. 16 S	2. 36 S	23. 49	1. 2
7	0. 28. 25	2. 28	0. 3. 49	1. 7	0. 30 N	0. 16	1. 7
13	1. 8. 0	2. 3	0. 11. 15	0. 56	3. 36	0. 43	1. 12
19	1. 17. 37	1. 34	0. 18. 40	0. 43	6. 39	1. 10	1. 17
25	1. 27. 15	1. 2	0. 26. 3	0. 29	9. 37	1. 37	1. 23
♂			*MARS.*			☌ 24ᵈ. 22ʰ.	
1	11. 19. 0	1. 35 S	11. 15. 19	0. 56 S	6. 39 S	23. 7	0. 21
7	11. 22. 47	1. 31	11. 20. 1	0. 53	4. 47	23. 25	0. 16
13	11. 26. 33	1. 27	11. 24. 42	0. 51	2. 53	23. 42	0. 11
19	0. 0. 17	1. 22	11. 29. 23	0. 48	0. 59 S	23. 59	0. 6
25	0. 4. 1	1. 17	0. 4. 2	0. 45	0. 55 N	0. 16	0. 1
♃			*JUPITER.*				
1	2. 10. 2	0. 38 S	1. 28. 58	0. 37 S	19. 21 N	3. 48	5. 0
7	2. 10. 34	0. 37	1. 29. 43	0. 36	19. 32	3. 51	4. 41
13	2. 11. 6	0. 37	2. 0. 34	0. 35	19. 44	3. 54	4. 22
19	2. 11. 37	0. 36	2. 1. 30	0. 33	19. 56	3. 58	4. 4
25	2. 12. 9	0. 35	2. 2. 29	0. 32	20. 9	4. 2	3. 47
♄			*SATURN.*				
1	1. 11. 3	2. 22 S	1. 5. 56	2. 14 S	11. 24 N	2. 17	3. 30
7	1. 11. 16	2. 22	1. 6. 29	2. 13	11. 36	2. 20	3. 10
13	1. 11. 29	2. 21	1. 7. 5	2. 12	11. 49	2. 22	2. 50
19	1. 11. 42	2. 21	1. 7. 44	2. 11	12. 3	2. 24	2. 31
25	1. 11. 55	2. 21	1. 8. 24	2. 10	12. 16	2. 27	2. 12
♅			*GEORGIAN.*				
1	9. 8. 11	0. 20 S	9. 10. 42	0. 19 S	23. 21 S	18. 47	19. 57
11	9. 8. 18	0. 20	9. 11. 2	0. 19	23. 20	18. 48	19. 21
21	9. 8. 24	0. 20	9. 11. 17	0. 20	23. 19	18. 49	18. 46

Days of the Week.	Days of the Month.	THE MOON'S Longitude. Noon. S. D. M. S.	THE MOON'S Longitude. Midnight. S. D. M. S.	THE MOON'S Latitude. Noon. D. M. S.	THE MOON'S Latitude. Midnight. D. M. S.
Sa.	1	7. 3. 21. 1	7. 9. 38. 15	5. 11. 33 S	5. 11. 25 S
Sun.	2	7. 15. 50. 48	7. 21. 59. 4	5. 7. 37	5. 0. 20
M.	3	7. 28. 3. 35	8. 4. 4. 56	4. 49. 44	4. 35. 59
Tu.	4	8. 10. 3. 37	8. 16. 0. 17	4. 19. 20	3. 59. 59
W.	5	8. 21. 55. 35	8. 27. 50. 8	3. 38. 7	3. 13. 58
Th.	6	9. 3. 44. 37	9. 9. 39. 38	2. 47. 45	2. 19. 44
F.	7	9. 15. 35. 49	9. 21. 33. 46	1. 50. 7	1. 19. 10
Sa.	8	9. 27. 34. 2	10. 3. 37. 9	0. 47. 10 S	0. 14. 25 S
Sun.	9	10. 9. 43. 34	10. 15. 53. 41	0. 18. 46 N	0. 52. 2 N
M.	10	10. 22. 7. 51	10. 28. 26. 19	1. 25. 0	1. 57. 15
Tu.	11	11. 4. 49. 15	11. 11. 16. 44	2. 28. 23	2. 57. 55
W.	12	11. 17. 48. 46	11. 24. 25. 14	3. 25. 27	3. 50. 31
Th.	13	0. 1. 5. 58	0. 7. 50. 43	4. 12. 40	4. 31. 31
F.	14	0. 14. 39. 8	0. 21. 30. 53	4. 46. 41	4. 57. 50
Sa.	15	0. 28. 25. 32	1. 5. 22. 40	5. 4. 43	5. 7. 10
Sun.	16	1. 12. 21. 50	1. 19. 22. 39	5. 5. 4	4. 58. 24
M.	17	1. 26. 24. 43	2. 3. 27. 42	4. 47. 12	4. 31. 37
Tu.	18	2. 10. 31. 16	2. 17. 35. 10	4. 11. 52	3. 48. 17
W.	19	2. 24. 39. 12	3. 1. 43. 10	3. 21. 11	2. 51. 0
Th.	20	3. 8. 46. 54	3. 15. 50. 16	2. 18. 12	1. 43. 21
F.	21	3. 22. 53. 7	3. 29. 55. 18	1. 6. 58 N	0. 29. 38 N
Sa.	22	4. 6. 56. 39	4. 13. 56. 58	0. 8. 4 S	0. 45. 30 S
Sun.	23	4. 20. 56. 0	4. 27. 53. 28	1. 22. 6	1. 57. 18
M.	24	5. 4. 49. 4	5. 11. 42. 27	2. 30. 33	3. 1. 22
Tu.	25	5. 18. 33. 16	5. 25. 21. 9	3. 29. 19	3. 54. 3
W.	26	6. 2. 5. 45	6. 8. 46. 44	4. 15. 17	4. 32. 45
Th.	27	6. 15. 23. 48	6. 21. 56. 45	4. 46. 19	4. 55. 59
F.	28	6. 28. 25. 25	7. 4. 49. 42	5. 1. 43	5. 3. 32
Sa.	29	7. 11. 9. 37	7. 17. 25. 16	5. 1. 35	4. 55. 59
Sun.	30	7. 23. 36. 50	7. 29. 44. 36	4. 46. 57	4. 34. 42
M.	31	8. 5. 48. 55	8. 11. 50. 11	4. 19. 25	4. 1. 21

Days of the Month.	Age.	Pass. Merid.	The Moon's Right Ascension.		The Moon's Declination.	
			Noon.	*Midnight.*	*Noon.*	*Midnight.*
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	20	15. 41	209. 15. 58	215. 29. 7	17. 31. 9 S	19. 37. 50 S
2	21	16. 29	221. 46. 54	228. 9. 30	21. 30. 4	23. 6. 47
3	22	17. 19	234. 36. 48	241. 8. 16	24. 27. 4	25. 30. 8
4	23	18. 10	247. 43. 1	254. 19. 56	26. 15. 22	26. 42. 19
5	24	19. 1	260. 57. 42	267. 34. 53	26. 50. 48	26. 40. 45
6	25	19. 51	274. 10. 5	280. 42. 0	26. 12. 22	25. 26. 6
7	26	20. 40	287. 9. 33	293. 31. 56	24. 22. 30	23. 2. 18
8	27	21. 27	299. 48. 41	305. 59. 42	21. 26. 25	19. 35. 54
9	28	22. 13	312. 5. 9	318. 5. 33	17. 31. 54	15. 15. 39
10	29	22. 57	324. 1. 42	329. 54. 39	12. 48. 27	10. 11. 45
11	30	23. 42	335. 45. 38	341. 36. 2	7. 27. 3	4. 35. 57 S
12	1	☌	347. 27. 24	353. 21. 22	1. 40. 8 S	1. 18. 31 N
13	2	0. 27	359. 19. 42	5. 24. 10	4. 18. 1 N	7. 16. 15
14	3	1. 14	11. 36. 32	17. 58. 30	10. 10. 57	12. 59. 40
15	4	2. 4	24. 31. 34	31. 16. 59	15. 39. 51	18. 8. 51
16	5	2. 58	38. 15. 34	45. 27. 34	20. 23. 55	22. 22. 18
17	6	3. 55	52. 52. 28	60. 28. 54	24. 1. 20	25. 18. 36
18	7	4. 56	68. 14. 39	76. 6. 42	26. 12. 6	26. 40. 21
19	8	5. 58	84. 1. 24	91. 54. 56	26. 42. 26	26. 18. 12
20	9	6. 59	99. 43. 40	107. 24. 25	25. 28. 18	24. 14. 3
21	10	7. 57	114. 54. 42	122. 12. 59	22. 37. 17	20. 40. 16
22	11	8. 52	129. 18. 35	136. 11. 37	18. 25. 35	15. 55. 58
23	12	9. 43	142. 52. 49	149. 23. 20	13. 14. 11	10. 22. 59
24	13	10. 32	155. 44. 40	161. 58. 33	7. 25. 4	4. 23. 1 N
25	14	11. 19	168. 6. 48	174. 11. 12	1. 19. 16 N	1. 43. 53 S
26	15	12. 5	180. 13. 30	186. 15. 22	4. 44. 12 S	7. 39. 34
27	16	12. 51	192. 18. 19	198. 23. 41	10. 28. 0	13. 7. 43
28	17	13. 39	204. 32. 35	210. 45. 51	15. 37. 1	17. 54. 15
29	18	14. 28	217. 4. 2	223. 27. 21	19. 57. 53	21. 46. 37
30	19	15. 18	229. 55. 37	236. 28. 19	23. 19. 23	24. 35. 11
31	20	16. 9	243. 4. 34	249. 43. 10	25. 33. 13	26. 12. 58

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		The Moon's Hor. Parallax.		Proportional Logarithm.	
		Noon.	Midnight.	Noon.	Midnight.		
		M. S.	M. S.	M. S.	M. S.	Noon.	Midn.
Sa.	1	15. 13	15. 8	55. 52	55. 32	5081	5107
Sun.	2	15. 3	14. 58	55. 13	54. 57	5132	5153
M.	3	14. 54	14. 51	54. 43	54. 31	5172	5187
Tu.	4	14. 49	14. 47	54. 22	54. 15	5199	5209
W.	5	14. 46	14. 46	54. 11	54. 10	5214	5215
Th.	6	14. 46	14. 47	54. 12	54. 16	5213	5207
F.	7	14. 49	14. 51	54. 22	54. 30	5199	5189
Sa.	8	14. 54	14. 57	54. 40	54. 53	5175	5158
Sun.	9	15. 1	15. 5	55. 6	55. 22	5141	5120
M.	10	15. 10	15. 15	55. 38	55. 55	5099	5077
Tu.	11	15. 19	15. 23	56. 12	56. 29	5055	5034
W.	12	15. 28	15. 33	56. 47	57. 5	5011	4988
Th.	13	15. 38	15. 42	57. 21	57. 36	4967	4949
F.	14	15. 46	15. 50	57. 51	58. 5	4930	4912
Sa.	15	15. 53	15. 56	58. 17	58. 27	4897	4885
Sun.	16	15. 59	16. 1	58. 37	58. 46	4873	4861
M.	17	16. 3	16. 5	58. 54	59. 0	4852	4844
Tu.	18	16. 6	16. 7	59. 5	59. 9	4838	4833
W.	19	16. 8	16. 8	59. 12	59. 14	4830	4827
Th.	20	16. 8	16. 8	59. 15	59. 14	4826	4827
F.	21	16. 8	16. 7	59. 12	59. 9	4830	4833
Sa.	22	16. 6	16. 4	59. 4	58. 58	4839	4847
Sun.	23	16. 2	15. 59	58. 50	58. 40	4856	4869
M.	24	15. 56	15. 53	58. 29	58. 16	4882	4899
Tu.	25	15. 49	15. 45	58. 1	57. 45	4917	4937
W.	26	15. 40	15. 35	57. 28	57. 10	4959	4981
Th.	27	15. 30	15. 25	56. 52	56. 33	5004	5028
F.	28	15. 19	15. 14	56. 14	55. 56	5053	5076
Sa.	29	15. 9	15. 5	55. 38	55. 21	5099	5122
Sun.	30	15. 1	14. 57	55. 6	54. 52	5141	5160
M.	31	14. 54	14. 51	54. 40	54. 30	5175	5189

DISTANCES of the MOON's *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
α Aquilæ.	1	89. 0. 27	87. 38. 34	86. 16. 59	84. 55. 43	83. 34. 45	82. 14. 6	80. 53. 48	79. 33. 50
	2	78. 14. 12	76. 54. 56	75. 36. 1	74. 17. 30	72. 59. 21	71. 41. 35	70. 24. 14	69. 7. 18
	3	67. 50. 47	66. 34. 40	65. 19. 2	64. 3. 51	62. 49. 9	61. 34. 56	60. 21. 16	59. 8. 9
	4	57. 55. 35	56. 43. 37	55. 32. 15	54. 21. 32	53. 11. 28	- - -	- - -	- - -
The Sun.	1	- - -	- - -	- - -	- - -	120. 52. 10	119. 26. 37	118. 1. 21	116. 36. 21
	2	115. 11. 38	113. 47. 10	112. 22. 57	110. 58. 58	109. 35. 13	108. 11. 42	106. 48. 23	105. 25. 16
	3	104. 2. 22	102. 39. 38	101. 17. 4	99. 54. 41	98. 32. 27	97. 10. 23	95. 48. 26	94. 26. 37
	4	93. 4. 56	91. 43. 22	90. 21. 52	89. 0. 29	87. 39. 10	86. 17. 56	84. 56. 44	83. 35. 35
	5	82. 14. 29	80. 53. 25	79. 32. 21	78. 11. 18	76. 50. 16	75. 29. 13	74. 8. 8	72. 47. 1
	6	71. 25. 53	70. 4. 42	68. 43. 26	67. 22. 7	66. 0. 44	64. 39. 16	63. 17. 42	61. 56. 3
	7	60. 34. 17	59. 12. 24	57. 50. 23	56. 28. 14	55. 5. 57	53. 43. 32	52. 20. 56	50. 58. 12
	8	49. 35. 18	48. 12. 13	46. 48. 57	45. 25. 30	44. 1. 53	42. 38. 5	41. 14. 4	39. 49. 52
Aldebaran.	14	53. 35. 11	51. 55. 16	50. 15. 15	48. 35. 10	46. 55. 4	45. 14. 56	43. 34. 52	41. 54. 51
	15	40. 14. 54	38. 35. 1	36. 55. 19	35. 15. 51	33. 36. 40	31. 57. 50	30. 19. 25	28. 41. 27
	16	27. 4. 1	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	16	68. 1. 29	66. 17. 21	64. 33. 8	62. 48. 50	61. 4. 28	59. 20. 1	57. 35. 31	55. 50. 58
	17	54. 6. 21	52. 21. 42	50. 37. 1	48. 52. 19	47. 7. 35	45. 22. 50	43. 38. 6	41. 53. 23
	18	40. 8. 41	38. 24. 0	36. 39. 23	34. 54. 51	33. 10. 24	31. 26. 5	29. 41. 53	27. 57. 51
	19	26. 14. 0	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	IIIh. D. M. S.	VIh. D. M. S.	IXh. D. M. S.	Midnight. D. M. S.	XVh. D. M. S.	XVIIIh. D. M. S.	XXIh. D. M. S.
Regulus.	19	62. 44. 51	60. 58. 54	59. 12. 55	57. 26. 56	55. 40. 56	53. 54. 56	52. 8. 56	50. 22. 56
	20	48. 36. 57	46. 50. 58	45. 5. 0	43. 19. 3	41. 33. 8	39. 47. 14	38. 1. 23	36. 15. 35
	21	34. 29. 49	32. 44. 7	30. 58. 29	29. 12. 55	27. 27. 26	- - -	- - -	- - -
Spica ♍.	21	- - -	- - -	- - -	- - -	81. 29. 6	79. 43. 24	77. 57. 45	76. 12. 10
	22	74. 26. 39	72. 41. 12	70. 55. 49	69. 10. 31	67. 25. 18	65. 40. 10	63. 55. 9	62. 10. 14
	23	60. 25. 25	58. 40. 43	56. 56. 9	55. 11. 43	53. 27. 25	51. 43. 15	49. 59. 15	48. 15. 24
	24	46. 31. 43	44. 48. 12	43. 4. 53	41. 21. 45	39. 38. 49	37. 56. 5	36. 13. 34	34. 31. 17
	25	32. 49. 14	31. 7. 26	29. 25. 53	27. 44. 37	26. 3. 37	- - -	- - -	- - -
Antares.	25	- - -	- - -	- - -	- - -	71. 43. 29	70. 2. 6	68. 20. 56	66. 40. 1
	26	64. 59. 21	63. 18. 55	61. 38. 45	59. 58. 50	58. 19. 10	56. 39. 47	55. 0. 39	53. 21. 47
	27	51. 43. 12	50. 4. 53	48. 26. 50	46. 49. 3	45. 11. 33	43. 34. 20	41. 57. 23	40. 20. 42
	28	38. 44. 19	37. 8. 13	35. 32. 22	33. 56. 49	32. 21. 32	30. 46. 31	29. 11. 47	27. 37. 18
	29	26. 3. 6	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	29	82. 11. 28	80. 50. 7	79. 29. 5	78. 8. 24	76. 48. 4	75. 28. 5	74. 8. 30	72. 49. 18
	30	71. 30. 29	70. 12. 5	68. 54. 8	67. 36. 37	66. 19. 33	- - -	- - -	- - -
Fomalhaut.	30	- - -	- - -	- - -	- - -	89. 51. 56	88. 28. 14	87. 4. 43	85. 41. 24
	31	84. 18. 16	82. 55. 20	81. 32. 36	80. 10. 4	78. 47. 45	77. 25. 38	76. 3. 43	74. 42. 2
	A.1	73. 20. 33	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	31	- - -	- - -	121. 17. 42	119. 55. 21	118. 33. 9	117. 11. 5	115. 49. 8	114. 27. 18
	A.1	113. 5. 35	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS ***WEST*** of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	*Midnight.* D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Regulus.	1	66. 7. 18	67. 41. 35	69. 15. 34	70. 49. 15	72. 22. 38	73. 55. 43	75. 28. 33	77. 1. 6
	2	78. 33. 22	80. 5. 23	81. 37. 9	83. 8. 41	84. 39. 57	- - -	- - -	- - -
Spica ♍.	2	- - -	- - -	- - -	- - -	30. 41. 2	32. 11. 43	33. 42. 13	35. 12. 34
	3	36. 42. 44	38. 12. 45	39. 42. 37	41. 12. 20	42. 41. 55	44. 11. 21	45. 40. 40	47. 9. 52
	4	48. 38. 57	50. 7. 56	51. 36. 50	53. 5. 39	54. 34. 24	56. 3. 5	57. 31. 44	59. 0. 20
	5	60. 28. 54	61. 57. 26	63. 25. 58	64. 54. 30	66. 23. 2	67. 51. 35	69. 20. 10	70. 48. 47
	6	72. 17. 27	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Antares.	6	26. 26. 51	27. 55. 41	29. 24. 36	30. 53. 34	32. 22. 37	33. 51. 45	35. 20. 59	36. 50. 20
	7	38. 19. 47	39. 49. 22	41. 19. 5	42 48. 56	44. 18. 56	45. 49. 5	47. 19. 24	48. 49. 53
	8	50. 20. 33	51. 51. 24	53. 22. 27	54. 53. 42	56. 25. 8	57. 56. 47	59. 28. 39	61. 0. 45
	9	62. 33. 3	64. 5. 35	65. 38. 22	67. 11. 23	68. 44. 38	- - -	- - -	- - -
The Sun.	15	- - -	- - -	- - -	39. 24. 43	41. 0. 50	42. 37. 6	44. 13. 31	45. 50. 4
	16	47. 26. 46	49. 3. 35	50. 40. 32	52. 17. 35	53. 54. 45	55. 32. 1	57. 9. 22	58. 46. 49
	17	60. 24. 21	62. 1. 58	63. 39. 40	65. 17. 27	66. 55. 17	68. 33. 11	70. 11. 8	71. 49. 8
	18	73. 27. 12	75. 5. 19	76. 43. 28	78. 21. 40	79. 59. 54	81. 38. 10	83. 16. 28	84. 54. 48
	19	86. 33. 9	88. 11. 32	89. 49. 56	91. 28. 21	93. 6. 46	94. 45. 12	96. 23. 38	98. 2. 4
	20	99. 40. 30	101. 18. 56	102. 57. 21	104. 35. 45	106. 14. 8	107. 52. 30	109. 30. 50	111. 9. 9
	21	112. 47. 25	114. 25. 39	116. 3. 50	117. 41. 59	119. 20. 4	120. 58. 6	- - -	- - -

Stars' Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	19	- - -	- - -	- - -	- - -	25. 45. 18	27. 23. 31	29. 2. 31	30. 42. 10
	20	32. 22. 27	34. 3. 14	35. 44. 33	37. 26. 15	39. 8. 20	40. 50. 37	42. 33. 8	44. 15. 53
	21	45. 58. 49	47. 41. 53	49. 25. 3	51. 8. 20	52. 51. 44	54. 35. 11	56. 18. 40	58. 2. 12
	22	59. 45. 46	61. 29. 19	63. 12. 53	64. 56. 25	66. 39. 57	68. 23. 26	70. 6. 52	71. 50. 14
	23	73. 33. 32	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	23	31. 9. 0	32. 52. 15	34. 35. 30	36. 18. 46	38. 2. 0	39. 45. 12	41. 28. 21	43. 11. 25
	24	44. 54. 25	46. 37. 18	48. 20. 3	50. 2. 42	51. 45. 12	53. 27. 33	55. 9. 44	56. 51. 45
	25	58. 33. 36	60. 15. 16	61. 56. 44	63. 38. 1	65. 19. 5	66. 59. 56	68. 40. 34	70. 20. 59
	26	72. 1. 9	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	26	35. 0. 21	36. 40. 32	38. 20. 28	40. 0. 11	41. 39. 38	43. 18. 50	44. 57. 48	46. 36. 30
	27	48. 14. 56	49. 53. 6	51. 31. 1	53. 8. 40	54. 46. 2	56. 23. 8	57. 59. 58	59. 36. 31
	28	61. 12. 48	62. 48. 49	64. 24. 33	66. 0. 0	67. 35. 11	69. 10. 6	70. 44. 45	72. 19. 8
	29	73. 53. 15	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	29	19. 57 40	21. 30. 42	23. 3. 33	24. 36. 15	26. 8. 47	27. 41. 8	29. 13. 19	30. 45. 18
	30	32. 17. 7	33. 48. 43	35. 20. 9	36. 51. 24	38. 22. 27	39. 53. 19	41. 24. 1	42. 54. 34
	31	44. 24. 55	45. 55. 6	47. 25. 9	48. 55. 4	50. 24. 49	51. 54. 26	53. 23. 56	54. 53. 20
	A.1	56. 22. 36	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, at ½ an Hour past VII o'Clock in the *Evening*.

Day	West	Jupiter	East
1	·1 ·2	○	4· 3·
2	4·	○	1☌3 ·2
3	2.● 4· 3· ·1	○	
4	4· 3· ·2	○	1.●
5	4· ·3	○	·1 ·2
6	·4 1·	○	2· .3○
7	·4 2·	○	·1 ·3
8	·4 ·1 ·2	○	3·
9	·4	○	1· 3· ·2
10	.4○ 3· ·1	○	2.●
11	3· ·2	○	1· ·4
12	·3	○	·2 ·4 .1○
13	1☌3	○	2· ·4
14	2·	○	·1 ·3 ·4
15	1☌2	○	3· 4·
16		○	1. 2☌3 4·
17	·1 3·	○	2· 4·
18	3· 2·	○	1·4·
19	.1○ ·3 4·	○	·2
20	1.● 4· ·3	○	2·
21	4· 2·	○	·1 ·3
22	4· ·2 1·	○	·3
23	·4	○	·1 ·2 3·
24	·4 ·1	○	2· 3.●
25	·4 3· 2·	○	1·
26	.2○ ·3 ·4 ·1	○	
27	·3	○	2· .4○ 1.●
28	2·	○	·1 ·3 ·4
29	·2 1·	○	·3 ·4
30		○	·1·2 3· ·4
31	1·	○	3· 2· ·4

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
Tu.	1	*Easter Tuesday.*
W.	2	
Th.	3	Richard, Bp. of Chich.
F.	4	St. Ambrose.
Sa.	5	
Sun.	6	*1st Sunday after Easter.*
M.	7	[*Low Sunday.*
Tu.	8	
W.	9	Oxf. & Camb. Terms beg.
Th.	10	
F.	11	
Sa.	12	
Sun.	13	*2d Sunday after Easter.*
M.	14	Fr. East. in 15 days 1 ret.
Tu.	15	
W.	16	Easter Term begins.
Th.	17	
F.	18	
Sa.	19	Alphege.
Sun.	20	*3d Sunday after Easter.*
M.	21	In 3 weeks aft. East. 2 ret.
Tu.	22	
W.	23	*St. George. K. Geo. IV.*
Th.	24	[*b. d. kept.*
F.	25	St. Mark. *Duch. of Glou. b.*
Sa.	26	
Sun.	27	*4th Sunday after Easter.*
M.	28	In 1 mo. aft. East. 3 ret.
Tu.	29	
W.	30	

Phases of the MOON.

	D.	H.	M.
☾ *Last Quarter* . . .	3.	3.	10
● New Moon	10.	18.	48
☽ *First Quarter* . .	17.	12.	49
○ Full Moon	24.	18.	59

Other *Phenomena.*

D. H. M.

2. 23. 59 ☽ ♅.

16. - . - ♅ Stationary.

20. 10. 19 ☉ enters ♉.

23. - . - ☿ ♂, ☿ 39½′ S. of ♂.

27. 9. 26 Im. of α ♏, *. 11⅔′ } N. of ☽'s Cent.

27. 10. 1¾ E. 13¼′ } N. of ☽'s Cent.

29. - . - ♀ ♃, ♀ 95¾′ N. of ♃.

Days of the Week.	Days of the Month.	The SUN's Longitude.	The SUN's Rt. Ascen. *in Time.*	The SUN's Declin. *North.*	Diff.	Equation of Time. *Add to app. Time.*	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S	M. S.	S.
Tu.	1	0. 10. 57. 31	0. 40. 17, 2	4. 20. 28	23. 8	4. 6, 9	18, 3
W.	2	0. 11. 56. 36	0. 43. 55, 4	4. 43. 36	23. 3	3. 48, 6	18, 2
Th.	3	0. 12. 55. 39	0. 47. 33, 7	5. 6. 39	22. 58	3. 30, 4	18, 0
F.	4	0. 13. 54. 41	0. 51. 12, 1	5. 29. 37	22. 52	3. 12, 4	17, 9
Sa.	5	0. 14. 53. 41	0. 54. 50, 8	5. 52. 29	22. 46	2. 54, 5	17, 7
Sun.	6	0. 15. 52. 40	0. 58. 29, 6	6. 15. 15	22. 39	2. 36, 8	17, 5
M.	7	0. 16. 51. 36	1. 2. 8, 6	6. 37. 54	22. 33	2. 19, 3	17, 2
Tu.	8	0. 17. 50. 31	1. 5. 47, 9	7. 0. 27	22. 26	2. 2, 1	17, 0
W.	9	0. 18. 49. 24	1. 9. 27, 4	7. 22. 53	22. 19	1. 45, 1	16, 7
Th.	10	0. 19. 48. 16	1. 13. 7, 2	7. 45. 12	22. 11	1. 28, 4	16, 5
F.	11	0. 20. 47. 5	1. 16. 47, 2	8. 7. 23	22. 3	1. 11, 9	16, 2
Sa.	12	0. 21. 45. 52	1. 20. 27, 5	8. 29. 26	21. 54	0. 55, 7	15, 9
Sun.	13	0. 22. 44. 38	1. 24. 8, 1	8. 51. 20	21. 45	0. 39, 8	15, 6
M.	14	0. 23. 43. 21	1. 27. 49, 0	9. 13. 5	21. 36	0. 24, 2	15, 3
Tu.	15	0. 24. 42. 2	1. 31. 30, 2	9. 34. 41	21. 26	0. 8, 9	15, 0
						Sub.	
W.	16	0. 25. 40. 40	1. 35. 11, 8	9. 56. 7	21. 17	0. 6, 1	14, 6
Th.	17	0. 26. 39. 17	1. 38. 53, 7	10. 17. 24	21. 6	0. 20, 7	14, 3
F.	18	0. 27. 37. 51	1. 42. 35, 9	10. 38. 30	20. 56	0. 35, 0	13, 9
Sa.	19	0. 28. 36. 23	1. 46. 18, 5	10. 59. 26	20. 44	0. 48, 9	13, 6
Sun.	20	0. 29. 34. 52	1. 50. 1, 5	11. 20. 10	20. 34	1. 2, 5	13, 1
M.	21	1. 0. 33. 20	1. 53. 44, 9	11. 40. 44	20. 22	1. 15, 6	12, 7
Tu.	22	1. 1. 31. 45	1. 57. 28, 7	12. 1. 6	20. 10	1. 28, 3	12, 3
W.	23	1. 2. 30. 8	2. 1. 12, 9	12. 21. 16	19. 58	1. 40, 6	11, 8
Th.	24	1. 3. 28. 30	2. 4. 57, 6	12. 41. 14	19. 45	1. 52, 4	11, 4
F.	25	1. 4. 26. 49	2. 8. 42, 7	13. 0. 59	19. 33	2. 3, 8	10, 9
Sa.	26	1. 5. 25. 7	2. 12. 28, 4	13. 20. 32	19. 20	2. 14, 7	10, 4
Sun.	27	1. 6. 23. 23	2. 16. 14, 5	13. 39. 52	19. 6	2. 25, 1	9, 9
M.	28	1. 7. 21. 38	2. 20. 1, 1	13. 58. 58	18. 52	2. 35, 0	9, 4
Tu.	29	1. 8. 19. 50	2. 23. 48, 3	14. 17. 50	18. 39	2. 44, 4	8, 8
W.	30	1. 9. 18. 2	2. 27. 36, 0	14. 36. 29		2. 53, 2	

Days	Time of ☉'s Semidiam. passing Merid.	The SUN's Semi-diameter.	The SUN's Hourly Motion.	The SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 4, 2	16. 1, 3	2. 27, 8	0. 000009	10. 3. 31
7	1. 4, 4	15. 59, 7	2. 27, 3	0. 000775	10. 3. 12
13	1. 4, 6	15. 58, 1	2. 26, 8	0. 001513	10. 2. 53
19	1. 4, 9	15. 56, 5	2. 26, 3	0. 002216	10. 2. 34
25	1. 5, 4	15. 54, 9	2. 25, 9	0. 002897	10. 2. 15

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite. Emersions. Days.	I. Satellite. Emersions. H. M. S.	II. Satellite. Emersions. Days.	II. Satellite. Emersions. H. M. S.	III. Satellite. Days.	III. Satellite. H. M. S.
1	18. 1. 7	*4	8. 48. 10	7	17. 46. 56 Im.
3	12. 29. 59	7	22. 5. 55	7	20. 16. 49 E.
5	6. 59. 0	11	11. 23. 37	14	21. 47. 46 Im.
7	1. 27. 51	15	0. 41. 19	15	0. 18. 34 E.
8	19. 56. 51	18	13. 59. 1	22	1. 48. 6 Im.
10	14. 25. 42	22	3. 16. 40	22	4. 19. 52 E.
*12	8. 54. 42	25	16. 34. 19	29	5. 48. 25 Im.
14	3. 23. 32	29	5. 51. 56	*29	8. 21. 13 E.
15	21. 52. 31				
17	16. 21. 21				
19	10. 50. 20				
21	5. 19. 9				
22	23. 48. 7				
24	18. 16. 56				
26	12. 45. 54			IV. Satellite.	
28	7. 14. 42				
30	1. 43. 39				

THE PLANETS'

Days	Heliocentric Long. S. D. M.	Heliocentric Lat. D. M.	Geocentric Long. S. D. M.	Geocentric Lat. D. M.	Declin. D. M.	Rt. Asc. *in Time.* H. M.	Passage Merid. H. M.
☿			*MERCURY.*			Sup. ☌ 28d. 20½h.	
1	9. 13. 19	5. 53 S	11. 17. 9	2. 23 S	7. 17 S	23. 16	22. 38
4	9. 22. 21	6. 24	11. 21. 42	2. 27	5. 33	23. 33	22. 44
7	10. 1. 50	6. 47	11. 26. 28	2. 27	3. 40	23. 51	22. 51
10	10. 11. 54	6. 59	0. 1. 29	2. 23	1. 36 S	0. 9	22. 59
13	10. 22. 43	6. 57	0. 6. 43	2. 14	0. 37 N	0. 28	23. 7
16	11. 4. 26	6. 39	0. 12. 11	2. 0	2. 59	0. 48	23. 16
19	11. 17. 12	6. 1	0. 17. 54	1. 42	5. 28	1. 9	23. 26
22	0. 1. 12	4. 58	0. 23. 51	1. 19	8. 2	1. 30	23. 37
25	0. 16. 32	3. 29	1. 0. 1	0. 53	10. 39	1. 53	23. 48
28	1. 3. 12	1. 35	1. 6. 21	0. 23	13. 17	2. 17	0. 1
30	1. 15. 0	0. 9	1. 10. 39	0. 2	15. 0	2. 33	0. 5
♀			*VENUS.*				
1	2. 8. 30	0. 23 S	1. 4. 39	0. 11 S	12. 55 N	2. 10	1. 30
7	2. 18. 11	0. 11 N	1. 11. 59	0. 5 N	15. 32	2. 38	1. 36
13	2. 27. 52	0. 45	1. 19. 18	0. 22	17. 56	3. 7	1. 43
19	3. 7. 34	1. 18	1. 26. 35	0. 39	20. 3	3. 36	1. 50
25	3. 17. 18	1. 49	2. 3. 50	0. 56	21. 51	4. 7	1. 58
♂			*MARS.*				
1	0. 8. 20	1. 11 S	0. 9. 25	0. 42 S	3. 6 N	0. 36	23. 55
7	0. 12. 0	1. 6	0. 14. 1	0. 38	4. 57	0. 53	23. 50
13	0. 15. 39	1. 0	0. 18. 36	0. 35	6. 45	1. 9	23. 44
19	0. 19. 16	0. 54	0. 23. 8	0. 32	8. 31	1. 26	23. 39
25	0. 22. 52	0. 47	0. 27. 39	0. 28	10. 13	1. 43	23. 34
♃			*JUPITER.*				
1	2. 12. 45	0. 34 S	2. 3. 43	0. 31 S	20. 25 N	4. 7	3. 27
7	2. 13. 17	0. 34	2. 4. 51	0. 30	20. 38	4. 12	3. 9
13	2. 13. 48	0. 33	2. 6. 1	0. 29	20. 51	4. 17	2. 52
19	2. 14. 20	0. 33	2. 7. 14	0. 28	21. 4	4. 22	2. 35
25	2. 14. 51	0. 32	2. 8. 29	0. 28	21. 17	4. 27	2. 18
♄			*SATURN.*				
1	1. 12. 11	2. 21 S	1. 9. 13	2. 9 S	12. 33 N	2. 30	1. 50
7	1. 12. 24	2. 21	1. 9. 56	2. 8	12. 47	2. 33	1. 31
13	1. 12. 37	2. 20	1. 10. 41	2. 7	13. 2	2. 36	1. 11
19	1. 12. 50	2. 20	1. 11. 26	2. 7	13. 16	2. 39	0. 52
25	1. 13. 3	2. 20	1. 12. 12	2. 6	13. 30	2. 42	0. 33
♅			*GEORGIAN.*			□ 1d. 12¾h.	
1	9. 8. 32	0. 20 S	9. 11. 29	0. 20 S	23. 18 S	18. 50	18. 7
11	9. 8. 39	0. 20	9. 11. 32	0. 20	23. 18	18. 50	17. 31
21	9. 8. 46	0. 20	9. 11. 34	0. 21	23. 18	18. 50	16. 54

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon.		Latitude. Noon.	
		Noon.	Midnight.	Noon.	Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Tu.	1	8. 17. 48. 54	8. 23. 45. 37	3. 40. 44 S	3. 17. 50 S
W.	2	8. 29. 40. 56	9. 5. 35. 28	2. 52. 52	2. 26. 5
Th.	3	9. 11. 29. 52	9. 17. 24. 48	1. 57. 44	1. 28. 4
F.	4	9. 23. 20. 58	9. 29. 19. 2	0. 57. 21 S	0. 25. 51 S
Sa.	5	10. 5. 19. 42	10. 11. 23. 35	0. 6. 8 N	0. 38. 20 N
Sun.	6	10. 17. 31. 18	10. 23. 43. 25	1. 10. 25	1. 41. 59
M.	7	11. 0. 0. 26	11. 6. 22. 45	2. 12. 42	2. 42. 9
Tu.	8	11. 12. 50. 41	11. 19. 24. 25	3. 9. 55	3. 35. 33
W.	9	11. 26. 4. 1	0. 2. 49. 23	3. 58. 37	4. 18. 39
Th.	10	0. 9. 40. 19	0. 16. 36. 28	4. 35. 13	4. 47. 57
F.	11	0. 23. 37. 20	1. 0. 42. 18	4. 56. 30	5. 0. 35
Sa.	12	1. 7. 50. 40	1. 15. 1. 39	5. 0. 0	4. 54. 41
Sun.	13	1. 22. 14. 27	1. 29. 28. 16	4. 44. 39	4. 30. 2
M.	14	2. 6. 42. 21	2. 13. 56. 0	4. 11. 4	3. 48. 5
Tu.	15	2. 21. 8. 36	2. 28. 19. 40	3. 21. 28	2. 51. 44
W.	16	3. 5. 28. 46	3. 12. 35. 38	2. 19. 23	1. 45. 1
Th.	17	3. 19. 40. 3	3. 26. 41. 54	1. 9. 12 N	0. 32. 32 N
F.	18	4. 3. 41. 9	4. 10. 37. 46	0. 4. 24 S	0. 41. 2 S
Sa.	19	4. 17. 31. 47	4. 24. 23. 15	1. 16. 50	1. 51. 15
Sun.	20	5. 1. 12. 10	5. 7. 58. 33	2. 23. 50	2. 54. 9
M.	21	5. 14. 42. 23	5. 21. 23. 39	3. 21. 48	3. 46. 28
Tu.	22	5. 28. 2. 17	6. 4. 38. 13	4. 7. 51	4. 25. 44
W.	23	6. 11. 11. 19	6. 17. 41. 30	4. 39. 57	4. 50. 25
Th.	24	6. 24. 8. 36	7. 0. 32. 33	4. 57. 3	4. 59. 51
F.	25	7. 6. 53. 14	7. 13. 10. 37	4. 58. 54	4. 54. 18
Sa.	26	7. 19. 24. 42	7. 25. 35. 32	4. 46. 12	4. 34. 47
Sun.	27	8. 1. 43. 12	8. 7. 47. 53	4. 20. 15	4. 2. 50
M.	28	8. 13. 49. 50	8. 19. 49. 20	3. 42. 46	3. 20. 22
Tu.	29	8. 25. 46. 45	9. 1. 42. 31	2. 55. 52	2. 29. 31
W.	30	9. 7. 37. 8	9. 13. 31. 8	2. 1. 35	1. 32. 23

Days of the Month.	Age.	Pass. Mer.	THE MOON's Right Ascension.		THE MOON's Declination.	
			Noon.	*Midnight.*	*Noon.*	*Midnight.*
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	21	17. 0	256. 22. 43	263. 1. 45	26. 34. 7 S	26. 36. 39 S
2	22	17. 51	269. 38. 45	276. 12. 21	26. 20. 43	25. 46. 44
3	23	18. 40	282. 41. 22	289. 4. 58	24. 55. 17	23. 47. 6
4	24	19. 27	295. 22. 38	301. 34. 14	22. 23. 5	20. 44. 12
5	25	20. 13	307. 39. 58	313. 40. 21	18. 51. 28	16. 45. 58
6	26	20. 58	319. 36. 11	325. 28. 33	14. 28. 51	12. 1. 19
7	27	21. 42	331. 18. 44	337. 8. 10	9. 24. 37	6. 40. 5
8	28	22. 27	342. 58. 28	348. 51. 22	3. 49. 11 S	0. 53. 33 S
9	29	23. 14	354. 48. 39	0. 52. 11	2. 5. 4 N	5. 4. 40 N
10	1	6	7. 3. 53	13. 25. 33	8. 3. 1	10. 57. 42
11	2	0. 4	19. 58. 54	26. 45. 21	13. 46. 3	16. 25. 6
12	3	0. 57	33. 45. 54	41. 0. 57	18. 51. 48	21. 3. 3
13	4	1. 55	48. 30. 6	56. 12. 0	22. 55. 46	24. 27. 4
14	5	2. 56	64. 4. 20	72. 3. 51	25. 34. 30	26. 16. 13
15	6	3. 59	80. 6. 34	88. 8. 12	26. 31. 7	26. 18. 58
16	7	5. 1	96. 4. 36	103. 52. 10	25. 40. 20	24. 36. 36
17	8	6. 1	111. 28. 8	118. 50. 43	23. 9. 45	21. 22. 14
18	9	6. 56	125. 59. 9	132. 53. 32	19. 16. 41	16. 55. 53
19	10	7. 47	139. 34. 39	146. 3. 50	14. 22. 35	11. 39. 27
20	11	8. 36	152. 22. 44	158. 33. 11	8. 49. 0	5. 53. 36 N
21	12	9. 22	164. 37. 7	170. 36. 31	2. 55. 30 N	0. 3. 12 S
22	13	10. 7	176. 33. 18	182. 29. 18	3. 0. 30 S	5. 54. 28
23	14	10. 53	188. 26. 11	194. 25. 28	8. 43. 16	11. 25. 7
24	15	11. 39	200. 28. 27	206. 36. 10	13. 58. 14	16. 20. 56
25	16	12. 27	212. 49. 22	219. 8. 26	18. 31. 39	20. 28. 51
26	17	13. 16	225. 33. 22	232. 3. 47	22. 11. 9	23. 37. 21
27	18	14. 7	238. 38. 50	245. 17. 19	24. 46. 24	25. 37. 31
28	19	14. 59	251. 57. 46	258. 38. 29	26. 10. 11	26. 24. 12
29	20	15. 50	265. 17. 45	271. 53. 54	26. 19. 36	25. 56. 43
30	21	16. 39	278. 25. 31	284. 51. 27	25. 16. 6	24. 18. 33

Days of the Week.	Days of the Month.	THE MOON'S. Semidiameter.		THE MOON'S. Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
Tu.	1	14. 49	14. 47	54. 22	54. 16	5199	5207
W.	2	14. 46	14. 46	54. 13	54. 13	5211	5211
Th.	3	14. 47	14. 48	54. 15	54. 20	5209	5202
F.	4	14. 50	14. 53	54. 27	54. 37	5193	5179
Sa.	5	14. 56	15. 0	54. 49	55. 3	5164	5145
Sun.	6	15. 5	15. 10	55. 20	55. 39	5123	5098
M.	7	15. 15	15. 21	55. 59	56. 20	5072	5045
Tu.	8	15. 27	15. 33	56. 41	57. 3	5018	4990
W.	9	15. 39	15. 45	57. 25	57. 47	4962	4935
Th.	10	15. 51	15. 56	58. 8	58. 27	4908	4885
F.	11	16. 1	16. 5	58. 45	59. 0	4863	4844
Sa.	12	16. 8	16. 11	59. 13	59. 23	4828	4816
Sun.	13	16. 13	16. 14	59. 31	59. 36	4806	4800
M.	14	16. 15	16. 15	59. 39	59. 39	4797	4797
Tu.	15	16. 15	16. 14	59. 37	59. 33	4799	4804
W.	16	16. 12	16. 10	59. 27	59. 20	4811	4820
Th.	17	16. 8	16. 5	59. 12	59. 3	4830	4841
F.	18	16. 3	15. 59	58. 53	58. 42	4853	4866
Sa.	19	15. 56	15. 53	58. 30	58. 18	4881	4896
Sun.	20	15. 50	15. 46	58. 5	57. 52	4912	4928
M.	21	15. 42	15. 38	57. 38	57. 24	4946	4964
Tu.	22	15. 34	15. 30	57. 9	56. 54	4983	5002
W.	23	15. 26	15. 22	56. 39	56. 24	5021	5040
Th.	24	15. 18	15. 14	56. 8	55. 53	5061	5080
F.	25	15. 10	15. 6	55. 38	55. 24	5099	5118
Sa.	26	15. 2	14. 59	55. 11	54. 58	5135	5152
Sun.	27	14. 56	14. 53	54. 46	54. 36	5168	5181
M.	28	14. 50	14. 48	54. 27	54. 20	5193	5202
Tu.	29	14. 47	14. 46	54. 14	54. 10	5210	5215
W.	30	14. 45	14. 45	54. 8	54. 9	5218	5217

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Fomalhaut.	1	73. 20. 33	71. 59. 17	70. 38. 14	69. 17. 25	67. 56. 49	66. 36. 27	65. 16. 20	63. 56. 28
	2	62. 36. 51	61. 17. 30	59. 58. 26	58. 39. 40	57. 21. 11	56. 3. 1	54. 45. 12	53. 27. 45
	3	52. 10. 41	50. 54. 4	49. 37. 52	48. 22. 6	47. 6. 48	- - -	- - -	- - -
The Sun.	1	113. 5. 35	111. 43. 59	110. 22. 27	109. 1. 0	107. 39. 38	106. 18. 20	104. 57. 5	103. 35. 52
	2	102. 14. 43	100. 53. 36	99. 32. 28	98. 11. 22	96. 50. 17	95. 29. 11	94. 8. 4	92. 46. 55
	3	91. 25. 44	90. 4. 31	88. 43. 13	87. 21. 52	86. 0. 27	84. 38. 57	83. 17. 20	81. 55. 37
	4	80. 33. 48	79. 11. 52	77. 49. 46	76. 27. 33	75. 5. 11	73. 42. 39	72. 19. 56	70. 57. 3
	5	69. 33. 59	68. 10. 44	66. 47. 15	65. 23. 35	63. 59. 42	62. 35 35	61. 11. 14	59. 46. 39
	6	58. 21. 49	56. 56. 43	55. 31. 22	54. 5. 45	52. 39. 52	51. 13. 43	49. 47. 16	48. 20. 33
	7	46. 53. 34	45. 26. 17	43. 58. 42	42. 30. 50	41. 2. 42	39. 34. 17	- - -	- - -
Pollux.	13	58. 14. 59	56. 27. 38	54. 40. 14	52. 52. 50	51. 5. 25	49. 18. 0	47. 30. 38	45. 43. 18
	14	43. 56. 0	42. 8. 46	40. 21. 37	38. 34. 36	36. 47. 43	35. 0. 58	33. 14. 26	31. 28. 8
	15	29. 42. 6	27. 56. 24	26. 11. 1	24. 26. 2	22. 41. 28	- - -	- - -	- - -
Regulus.	15	- - -	- - -	- - -	- - -	59. 4. 5	57. 16. 36	55. 29. 13	53. 41. 58
	16	51. 54. 50	50. 7. 49	48. 20. 57	46. 34. 13	44. 47. 37	43. 1. 10	41. 14. 53	39. 28. 46
	17	37. 42. 48	35. 57. 0	34. 11. 24	32. 25. 59	30. 40. 45	28. 55. 43	27. 10. 54	25. 26. 18
	18	23. 41. 55	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon.	III^{h}.	VI^{h}.	IX^{h}.	Midnight.	XV^{h}.	XVIII^{h}.	XXI^{h}.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica ♍.	18	77. 42. 13	75. 57. 33	74. 13. 3	72. 28. 44	70. 44. 35	69. 0. 36	67. 16. 48	65. 33. 10
	19	63. 49. 43	62. 6. 26	60. 23. 20	58. 40. 25	56. 57. 40	55. 15. 7	53. 32. 44	51. 50. 33
	20	50. 8. 33	48. 26. 44	46. 45. 7	45. 3. 41	43. 22. 27	41. 41. 25	40. 0. 34	38. 19. 56
	21	36. 39. 31	34. 59. 18	33. 19. 17	31. 39. 31	29. 59. 58	28. 20. 39	26. 41. 36	25. 2. 48
	22	23. 24. 15	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Antares.	22	69. 2. 22	67. 23. 16	65. 44. 22	64. 5. 40	62. 27. 9	60. 48. 50	59. 10. 42	57. 32. 47
	23	55. 55. 3	54. 17. 31	52. 40. 10	51. 3. 1	49. 26. 5	47. 49. 21	46. 12. 49	44. 36. 29
	24	43. 0. 22	41. 24. 26	39. 48. 43	38. 13. 12	36. 37. 53	35. 2. 47	33. 27. 52	31. 53. 10
	25	30. 18. 41	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	25	85. 51. 0	84. 28. 57	83. 7. 8	81. 45. 35	80. 24. 17	79. 3. 15	77. 42. 32	76. 22. 7
	26	75. 2. 1	73. 42. 14	72. 22. 50	71. 3. 47	69. 45. 8	68. 26. 52	67. 9. 2	65. 51. 39
	27	64. 34. 43	63. 18. 16	62. 2. 20	60. 46. 55	59. 32. 2	- - -	- - -	- - -
Fomalhaut.	27	- - -	- - -	- - -	- - -	82. 33. 24	81. 10. 29	79. 47. 45	78. 25. 13
	28	77. 2. 54	75. 40. 48	74. 18. 54	72. 57. 15	71. 35. 50	70. 14. 39	68. 53. 43	67. 33. 3
	29	66. 12. 39	64. 52. 30	63. 32. 39	62. 13. 6	60. 53. 51	59. 34. 55	58. 16. 19	56. 58. 6
	30	55. 40. 14	54. 22. 45	53. 5. 40	51. 49. 4	50. 32. 54	49. 17. 15	48. 2. 9	46. 47. 36
	M. 1	45. 33. 38	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	30	121. 39. 34	120. 18. 32	118. 57. 28	117. 36. 25	116. 15. 22	114. 54. 18	113. 33. 11	112. 12. 2
	M. 1	110. 50. 52	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON's *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	*Midnight.* D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Spica ♍.	1	56. 22. 37	57. 51. 47	59. 20. 52	60. 49. 52	62. 18. 47	63. 47. 38	65. 16. 26	66. 45. 12
	2	68. 13. 55	69. 42. 36	71. 11. 16	72. 39. 55	74. 8. 34	75. 37. 15	77. 5. 55	78. 34. 37
	3	80. 3. 21	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Antares.	3	34. 14. 4	35. 42. 58	37. 11. 56	38. 40. 58	40. 10. 4	41. 39. 15	43. 8. 33	44. 37. 58
	4	46. 7. 28	47. 37. 6	49. 6. 53	50. 36. 49	52. 6. 53	53. 37. 7	55. 7. 33	56. 38. 10
	5	58. 8. 57	59. 39. 57	61. 11. 10	62. 42. 36	64. 14. 15	65. 46. 8	67. 18. 16	68. 50. 40
	6	70. 23. 18	71. 56. 13	73. 29. 24	75. 2. 53	76. 36. 38	78. 10. 41	79. 45. 1	81. 19. 42
	7	82. 54. 40	84. 29. 58	86. 5. 35	87. 41. 31	89. 17. 48	90. 54. 24	92. 31. 19	94. 8. 35
	8	95. 46. 11	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	13	- - -	- - -	- - -	- - -	- - -	- - -	39. 48. 36	41. 28. 40
	14	43. 8. 49	44. 49. 0	46. 29. 13	48. 9. 28	49. 49. 43	51. 29. 57	53. 10. 9	54. 50. 20
	15	56. 30. 29	58. 10. 35	59. 50. 37	61. 30. 35	63. 10. 29	64. 50. 17	66. 30. 0	68. 9. 37
	16	69. 49. 8	71. 28. 33	73. 7. 50	74. 47. 0	76. 26. 3	78. 4. 57	79. 43. 44	81. 22. 22
	17	83. 0. 51	84. 39. 12	86. 17. 23	87. 55. 26	89. 33. 20	91. 11. 4	92. 48. 38	94. 26. 3
	18	96. 3. 18	97. 40. 23	99. 17. 17	100. 54. 2	102. 30. 36	104. 6. 59	105. 43. 12	107. 19. 14
	19	108. 55. 6	110. 30. 47	112. 6. 18	113. 41. 37	115. 16. 46	116. 51. 43	118. 26. 29	120. 1. 4

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Aldebaran.	17	- - -	- - -	- - -	- - -	49. 40. 26	51. 23. 24	53. 6. 19	54. 49. 10
	18	56. 31. 58	58. 14. 41	59. 57. 19	61. 39. 51	63. 22. 17	65. 4. 36	66. 46. 48	68. 28. 53
	19	70. 10. 50	71. 52. 39	73. 34. 19	75. 15. 52	76. 57. 15	78. 38. 29	80. 19. 34	82. 0. 30
	20	83. 41. 15	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	20	41. 21. 29	43. 2. 27	44. 43. 17	46. 24. 0	48. 4. 36	49. 45. 4	51. 25. 23	53. 5. 34
	21	54. 45. 36	56. 25. 29	58. 5. 12	59. 44. 46	61. 24. 10	63. 3. 24	64. 42. 28	66. 21. 22
	22	68. 0. 5	69. 38. 38	71. 17. 0	72. 55. 11	74. 33. 11	- - -	- - -	- - -
Regulus.	22	- - -	- - -	- - -	- - -	37. 32. 38	39. 10. 41	40. 48. 34	42. 26. 17
	23	44. 3. 49	45. 41. 10	47. 18. 20	48. 55. 18	50. 32. 5	52. 8. 40	53. 45. 2	55. 21. 14
	24	56. 57. 13	58. 33. 1	60. 8. 37	61. 44. 1	63. 19. 13	64. 54. 12	66. 29. 0	68. 3. 36
	25	69. 37. 59	71. 12. 10	72. 46. 10	74. 19. 58	75. 53. 34	77. 26. 58	79. 0. 10	80. 33. 11
	26	82. 6. 0	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	26	28. 6. 26	29. 38. 40	31. 10. 44	32. 42. 40	34. 14. 26	35. 46. 3	37. 17. 31	38. 48. 50
	27	40. 19. 59	41. 50. 59	43. 21. 50	44. 52. 33	46. 23. 7	47. 53. 32	49. 23. 49	50. 53. 59
	28	52. 24. 0	53. 53. 53	55. 23. 39	56. 53. 18	58. 22. 50	59. 52. 15	61. 21. 35	62. 50. 49
	29	64. 19. 57	65. 49. 0	67. 17. 59	68. 46. 54	70. 15. 45	71. 44. 32	73. 13. 17	74. 42. 0
	30	76. 10. 40	77. 39. 19	79. 7. 57	80. 36. 35	82. 5. 13	83. 33. 51	85. 2. 31	86. 31. 12
	M. 1	87. 59. 55	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER,
At VIII o'Clock in the *Evening*.

1	3· 2·	O	1· 4·
2	·3 ·1 ·2	O	4·
3	·3	O	1· 2· 4·
4	2.●	O	·3 4· .1O
5	·2 1δ4	O	·3
6	4·	O	1δ2 3·
7	4· 1·	O	3· ·2·
8	4· 3·2·	O	1·
9	4· 3· ·1·2	O	
10	·4 ·3	O	1· ·2
11	·4	O	·3 2.●.1O
12	1.● ·4·2	O	·3
13	·4	O	1δ2 3·
14	1·	O	·3·2δ4
15	2δ3	O	·1 ·4
16	3· 1δ2	O	·4
17	·3	O	1· ·2 ·4
18	.3O ·1	O	2· 4·
19	1.● ·2	O	·3 4·
20		O	1δ2 3δ4
21	1·	O	4·2δ3
22	2δ3 4·	O	·1
23	3δ4 1δ2	O	
24	4· ·3	O	1· ·2
25	4· ·1 ·3	O	2·
26	·4 2·	O	1· ·3
27	·4	O	·3 .2O.1O
28	·4 1·	O	2δ3
29	3.● ·4 2·	O	·1
30	3· ·2 1·	O	.4O

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
Th.	1	*St. Philip and St. James.*
F.	2	
Sa.	3	Invention of the Cross.
Sun.	4	*5th Su. aft. Eas. Rog. Sun.*
M.	5	In 5 weeks aft. Eas. 4 ret.
Tu.	6	John Evan. Ante Port. L.
W.	7	*Duchess of York born.*
Th.	8	*Ascen. Day, Holy Thurs.*
F.	9	On mor. of Ascen. 5 ret.
Sa.	10	
Sun.	11	*Sunday aft. Ascen. Day.*
M.	12	Easter T. ends.
Tu.	13	
W.	14	
Th.	15	
F.	16	
Sa.	17	Oxford Term ends.
Sun.	18	*Whit-Sunday.*
M.	19	*Whit-Mond.* Dunstan.
Tu.	20	*Whit-Tuesday.*
W.	21	Oxford Term begins.
Th.	22	Camb. T. div. n. *Prs. of*
F.	23	[*Homburg born.*
Sa.	24	
Sun.	25	*Trinity Sunday.*
M.	26	On mor. H. Tr. 1 r. Aug.
Tu.	27	Ven. Bede. [1st Abp. of Cant.
W.	28	
Th.	29	*K. Charles II. restored.*
F.	30	Trinity Term begins.
Sa.	31	

Phases of the **MOON.**

		D.	H.	M.
☾	*Last Quarter*	2.	21.	48
●	New Moon	10.	4.	13
☽	*First Quarter* . . .	16.	19.	32
○	Full Moon	24.	9.	7

Other *Phenomena.*

D.	H.	M.	
11.	4.	24	☽ ☿.
12.	14.	5	☽ ♀.
21.	10.	39	☉ enters ♊.
24.	18.	0	☽ α ♏.
27.	13.	38	☽ ♅.

Days of the Week.	Days of the Month.	The Sun's Longitude.	The Sun's Rt. Ascen. in Time.	The Sun's Declin. North.	Diff.	Equation of Time. Sub. from app. Time.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	M. S.	S.
Th.	1	1. 10. 16. 11	2. 31. 24, 2	14. 54. 53	18. 9	3. 1, 5	7, 8
F.	2	1. 11. 14. 20	2. 35. 13, 0	15. 13. 2	17. 55	3. 9, 3	7, 2
Sa.	3	1. 12. 12. 27	2. 39. 2, 3	15. 30. 57	17. 40	3. 16, 5	6, 6
Sun.	4	1. 13. 10. 32	2. 42. 52, 3	15. 48. 37	17. 24	3. 23, 1	6, 0
M.	5	1. 14. 8. 37	2. 46. 42, 8	16. 6. 1	17. 8	3. 29, 1	5, 5
Tu.	6	1. 15. 6. 40	2. 50. 33, 8	16. 23. 9	16. 52	3. 34, 6	4, 8
W.	7	1. 16. 4. 42	2. 54. 25, 5	16. 40. 1	16. 35	3. 39, 4	4, 3
Th.	8	1. 17. 2. 42	2. 58. 17, 8	16. 56. 36	16. 18	3. 43, 7	3, 7
F.	9	1. 18. 0. 41	3. 2. 10, 6	17. 12. 54	16. 2	3. 47, 4	3, 1
Sa.	10	1. 18. 58. 39	3. 6. 4, 1	17. 28. 56	15. 44	3. 50, 5	2, 6
Sun.	11	1. 19. 56. 35	3. 9. 58, 1	17. 44. 40	15. 26	3. 53, 1	1, 9
M.	12	1. 20. 54. 30	3. 13. 52, 6	18. 0. 6	15. 8	3. 55, 0	1, 5
Tu.	13	1. 21. 52. 23	3. 17. 47, 8	18. 15. 14	14. 49	3. 56, 5	0, 8
W.	14	1. 22. 50. 14	3. 21. 43, 5	18. 30. 3	14. 31	3. 57, 3	0, 3
Th.	15	1. 23. 48. 3	3. 25. 39, 8	18. 44. 34	14. 12	3. 57, 6	0, 3
F.	16	1. 24. 45. 51	3. 29. 36, 6	18. 58. 46	13. 53	3. 57, 3	0, 8
Sa.	17	1. 25. 43. 37	3. 33. 34, 0	19. 12. 39	13. 33	3. 56, 5	1, 3
Sun.	18	1. 26. 41. 21	3. 37. 31, 9	19. 26. 12	13. 13	3. 55, 2	1, 9
M.	19	1. 27. 39. 4	3. 41. 30, 3	19. 39. 25	12. 53	3. 53, 3	2, 4
Tu.	20	1. 28. 36. 45	3. 45. 29, 3	19. 52. 18	12. 33	3. 50, 9	3, 0
W.	21	1. 29. 34. 25	3. 49. 28, 8	20. 4. 51	12. 12	3. 47, 9	3, 5
Th.	22	2. 0. 32. 3	3. 53. 28, 9	20. 17. 3	11. 52	3. 44, 4	4, 0
F.	23	2. 1. 29. 39	3. 57. 29, 4	20. 28. 55	11. 30	3. 40, 4	4, 5
Sa.	24	2. 2. 27. 15	4. 1. 30, 5	20. 40. 25	11. 9	3. 35, 9	5, 1
Sun.	25	2. 3. 24. 49	4. 5. 32, 2	20. 51. 34	10. 48	3. 30, 8	5, 5
M.	26	2. 4. 22. 22	4. 9. 34, 3	21. 2. 22	10. 27	3. 25, 3	6, 1
Tu.	27	2. 5. 19. 55	4. 13. 36, 9	21. 12. 49	10. 4	3. 19, 2	6, 5
W.	28	2. 6. 17. 26	4. 17. 40, 0	21. 22. 53	9. 42	3. 12, 7	7, 1
Th.	29	2. 7. 14. 56	4. 21. 43, 7	21. 32. 35	9. 20	3. 5, 6	7, 5
F.	30	2. 8. 12. 25	4. 25. 47, 7	21. 41. 55	8. 58	2. 58, 1	8, 0
Sa.	31	2. 9. 9. 54	4. 29. 52, 3	21. 50. 53		2. 50, 1	

Days	Time of ☉'s Semidiam. passing Merid.	The SUN's Semi-diameter.	The SUN's Hourly Motion.	The SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 5,8	15. 53, 5	2. 25, 4	0. 003567	10. 1. 56
7	1. 6,3	15. 52, 1	2. 25, 0	0. 004206	10. 1. 37
13	1. 6,8	15. 50, 8	2. 24, 6	0. 004783	10. 1. 18
19	1. 7,2	15. 49, 7	2. 24, 3	0. 005290	10. 0. 59
25	1. 7,7	15. 48, 7	2. 23, 9	0. 005751	10. 0. 40

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
Emersions.		*Emersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	20. 12. 27	2	19. 9. 34	6	9. 49. 14 Im.
3	14. 41. 23	*6	8. 27. 10	6	12. 22. 59 E.
5	9. 10. 9	9	21. 44. 45		
7	3. 39. 6				
8	22. 7. 52				
				IV. Satellite.	

The PLANETS'

Days	Heliocentric Long. S. D. M.	Heliocentric Lat. D. M.	Geocentric. Long. S. D. M.	Geocentric. Lat. D. M.	Declin. D. M.	Rt. Asc. *in Time.* H. M.	Passage Merid. H. M.
☿			*MERCURY.*			Gr. Elong. 28[d].	
1	1. 21. 4	0. 36 N	1. 12. 49	0. 8 N	15. 50 N	2. 41	0. 10
4	2. 9. 45	2. 48	1. 19. 17	0. 40	18. 13	3. 7	0. 24
7	2. 28. 41	4. 44	1. 25. 39	1. 10	20. 20	3. 32	0. 38
10	3. 17. 11	6. 8	2. 1. 47	1. 36	22. 7	3. 57	0. 51
13	4. 4. 43	6. 52	2. 7. 33	1. 57	23. 31	4. 22	1. 4
16	4. 20. 55	6. 59	2. 12. 55	2. 11	24. 32	4. 45	1. 15
19	5. 5. 40	6. 36	2. 17. 48	2. 18	25. 12	5. 6	1. 25
22	5. 19. 3	5. 53	2. 22. 12	2. 18	25. 32	5. 25	1. 32
25	6. 1. 14	4. 58	2. 26. 5	2. 10	25. 34	5. 43	1. 37
28	6. 12. 23	3. 55	2. 29. 25	1. 54	25. 22	5. 57	1. 40
31	6. 22. 42	2. 48	3. 2. 12	1. 31	24. 58	6. 10	1. 40
♀			*VENUS.*				
1	3. 27. 2	2. 16 N	2. 11. 4	1. 12 N	23. 19 N	4. 37	2. 6
7	4. 6. 46	2. 40	2. 18. 15	1. 26	24. 23	5. 8	2. 14
13	4. 16. 32	2. 59	2. 25. 25	1. 39	25. 2	5. 40	2. 22
19	4. 26. 17	3. 13	3. 2. 31	1. 50	25. 17	6. 11	2. 30
25	5. 6. 2	3. 21	3. 9. 36	1. 59	25. 6	6. 42	2. 37
♂			*MARS.*				
1	0. 26. 26	0. 41 S	1. 2. 9	0. 24 S	11. 51 N	2. 0	23. 28
7	0. 29. 58	0. 35	1. 6. 36	0. 21	13. 25	2. 18	23. 22
13	1. 3. 28	0. 28	1. 11. 2	0. 17	14. 53	2. 35	23. 16
19	1. 6. 56	0. 22	1. 15. 25	0. 13	16. 16	2. 52	23. 9
25	1. 10. 22	0. 15	1. 19. 47	0. 9	17. 33	3. 9	23. 3
♃			*JUPITER.*				
1	2. 15. 23	0. 31 S	2. 9. 46	0. 27 S	21. 30 N	4. 33	2. 1
7	2. 15. 54	0. 31	2. 11. 5	0. 26	21. 42	4. 38	1. 44
13	2. 16. 25	0. 30	2. 12. 25	0. 25	21. 53	4. 44	1. 26
19	2. 16. 57	0. 29	2. 13. 46	0. 25	22. 4	4. 50	1. 8
25	2. 17. 28	0. 29	2. 15. 9	0. 24	22. 14	4. 56	0. 50
♄			*SATURN.*			☌ 4[d]. 5[h].	
1	1. 13. 16	2. 20 S	1. 12. 58	2. 6 S	13. 45 N	2. 45	0. 13
7	1. 13. 29	2. 20	1. 13. 44	2. 6	13. 59	2. 48	23. 50
13	1. 13. 42	2. 19	1. 14. 30	2. 6	14. 12	2. 51	23. 30
19	1. 13. 55	2. 19	1. 15. 16	2. 6	14. 26	2. 54	23. 9
25	1. 14. 8	2. 19	1. 16. 2	2. 6	14. 39	2. 57	22. 48
♅			*GEORGIAN.*				
1	9. 8. 52	0. 20 S	9. 11. 29	0. 21 S	23. 19 S	18. 50	16. 16
11	9. 8. 59	0. 20	9. 11. 19	0. 21	23. 20	18. 49	15. 37
21	9. 9. 6	0. 20	9. 11. 5	0. 21	23. 21	18. 48	14. 56

Days of the Week.	Days of the Month.	The Moon's Longitude. Noon.	The Moon's Longitude. Midnight.	The Moon's Latitude. Noon.	The Moon's Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
Th.	1	9. 19. 25. 6	9. 25. 19. 38	1. 2. 10 S	0. 31. 11 S
F.	2	10. 1. 15. 26	10. 7. 13. 6	0. 0. 15 N	0. 31. 51 N
Sa.	3	10. 13. 13. 22	10. 19. 16. 56	1. 3. 21	1. 34. 24
Sun.	4	10. 25. 24. 26	11. 1. 36. 33	2. 4. 42	2. 33. 54
M.	5	11. 7. 53. 52	11. 14. 16. 56	3. 1. 38	3. 27. 30
Tu.	6	11. 20. 46. 12	11. 27. 22. 1	3. 51. 6	4. 12. 1
W.	7	0. 4. 4. 37	0. 10. 54. 2	4. 29. 49	4. 44. 5
Th.	8	0. 17. 50. 11	0. 24. 52. 47	4. 54. 25	5. 0. 29
F.	9	1. 2. 1. 22	1. 9. 15. 17	5. 1. 58	4. 58. 38
Sa.	10	1. 16. 33. 43	1. 23. 55. 44	4. 50. 24	4. 37. 18
Sun.	11	2. 1. 20. 17	2. 8. 46. 16	4. 19. 27	3. 57. 8
M.	12	2. 16. 12. 37	2. 23. 38. 17	3. 30. 45	3. 0. 47
Tu.	13	3. 1. 2. 18	3. 8. 23. 51	2. 27. 49	1. 52. 32
W.	14	3. 15. 42. 16	3. 22. 56. 59	1. 15. 36 N	0. 37. 42 N
Th.	15	4. 0. 7. 37	4. 7. 13. 55	0. 0. 28 S	0. 38. 16 S
F.	16	4. 14. 15. 48	4. 21. 13. 11	1. 15. 6	1. 50. 27
Sa.	17	4. 28. 6. 10	5. 4. 54. 51	2. 23. 48	2. 54. 44
Sun.	18	5. 11. 39. 23	5. 18. 20. 0	3. 22. 54	3. 47. 59
M.	19	5. 24. 56. 49	6. 1. 30. 4	4. 9. 45	4. 28. 0
Tu.	20	6. 7. 59. 55	6. 14. 26. 30	4. 42. 37	4. 53. 30
W.	21	6. 20. 49. 58	6. 27. 10. 32	5. 0. 36	5. 3. 57
Th.	22	7. 3. 28. 11	7. 9. 43. 5	5. 3. 33	4. 59. 30
F.	23	7. 15. 55. 17	7. 22. 4. 53	4. 51. 55	4. 40. 59
Sa.	24	7. 28. 11. 59	8. 4. 16. 42	4. 26. 52	4. 9. 46
Sun.	25	8. 10. 19. 10	8. 16. 19. 33	3. 49. 56	3. 27. 38
M.	26	8. 22. 18. 2	8. 28. 14. 53	3. 3. 6	2. 36. 39
Tu.	27	9. 4. 10. 22	9. 10. 4. 50	2. 8. 33	1. 39. 7
W.	28	9. 15. 58. 38	9. 21. 52. 13	1. 8. 37	0. 37. 22 S
Th.	29	9. 27. 46. 4	10. 3. 40. 41	0. 5. 38 S	0. 26. 15 N
F.	30	10. 9. 36. 35	10. 15. 34. 22	0. 57. 59 N	1. 29. 17
Sa.	31	10. 21. 34. 40	10. 27. 38. 4	1. 59. 51	2. 29. 19

Days of the Month.	Age.	Pass. Merid.	The Moon's Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	22	17. 26	291. 10. 56	297. 23. 36	23. 4. 58 S	21. 36. 21 S
2	23	18. 12	303. 29. 30	309. 29. 1	19. 53. 47	17. 58. 24
3	24	18. 56	315. 22. 53	321. 12. 10	15. 51. 18	13. 33. 36
4	25	19. 39	326. 58. 7	332. 42. 11	11. 6. 26	8. 30. 58
5	26	20. 23	338. 26. 1	344. 11. 26	5. 48. 23	3. 0. 0 S
6	27	21. 8	350. 0. 21	355. 54. 46	0. 7. 14 S	2. 48. 19 N
7	28	21. 56	1. 56. 47	8. 8. 31	5. 44. 51 N	8. 40. 15
8	29	22. 48	14. 32. 2	21. 9. 13	11. 32. 9	14. 17. 51
9	30	23. 44	28. 1. 42	35. 10. 36	16. 54. 20	19. 18. 17
10	1	6	42. 36. 17	50. 18. 9	21. 26. 17	23. 14. 53
11	2	0. 45	58. 14. 25	66. 22. 6	24. 40. 50	25. 41. 24
12	3	1. 49	74. 37. 5	82. 54. 30	26. 14. 34	26. 19. 15
13	4	2. 54	91. 9. 12	99. 16. 24	25. 55. 27	25. 4. 12
14	5	3. 56	107. 12. 7	114. 53. 30	23. 47. 26	22. 7. 46
15	6	4. 54	122. 19. 0	129. 28. 10	20. 8. 14	17. 51. 59
16	7	5. 47	136. 21. 31	143. 0. 17	15. 22. 11	12. 41. 50
17	8	6. 37	149. 26. 11	155. 41. 13	9. 53. 44	7. 0. 27
18	9	7. 23	161. 47. 32	167. 47. 19	4. 4. 14 N	1. 7. 13 N
19	10	8. 8	173. 42. 41	179. 35. 41	1. 48. 40 S	4. 41. 40 S
20	11	8. 52	185. 28. 13	191. 22. 3	7. 30. 4	10. 12. 16
21	12	9. 38	197. 18. 46	203. 19. 43	12. 46. 42	15. 11. 50
22	13	10. 24	209. 25. 55	215. 38. 4	17. 26. 8	19. 28. 8
23	14	11. 12	221. 56. 31	228. 21. 11	21. 16. 24	22. 49. 40
24	15	12. 2	234. 51. 31	241. 26. 34	24. 6. 45	25. 6. 39
25	16	12. 53	248. 5. 0	254. 45. 7	25. 48. 37	26. 12. 12
26	17	13. 44	261. 25. 6	268. 3. 6	26. 17. 13	26. 3. 49
27	18	14. 34	274. 37. 21	281. 6. 21	25. 32. 25	24. 43. 42
28	19	15. 21	287. 28. 57	293. 44. 26	23. 38. 34	22. 18. 4
29	20	16. 7	299. 52. 31	305. 53. 16	20. 43. 19	18. 55. 32
30	21	16. 51	311. 47. 10	317. 35. 3	16. 55. 57	14. 45. 45
31	22	17. 33	323. 18. 3	328. 57. 29	12. 26. 6	9. 58. 10

Days of the Week.	Days of the Month.	The Moon's Semidiameter. Noon. M. S.	Semidiameter. Midnight. M. S.	Hor. Parallax. Noon. M. S.	Hor. Parallax. Midnight. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
Th.	1	14. 46	14. 48	54. 12	54. 18	5213	5205
F.	2	14. 50	14. 53	54. 26	54. 36	5194	5181
Sa.	3	14. 56	15. 0	54. 49	55. 5	5164	5143
Sun.	4	15. 5	15. 11	55. 23	55. 43	5119	5093
M.	5	15. 17	15. 23	56. 5	56. 28	5064	5035
Tu.	6	15. 30	15. 37	56. 53	57. 19	5003	4970
W.	7	15. 44	15. 52	57. 45	58. 12	4937	4903
Th.	8	15. 58	16. 5	58. 37	59. 1	4873	4843
F.	9	16. 11	16. 16	59. 23	59. 43	4816	4792
Sa.	10	16. 21	16. 25	60. 0	60. 13	4771	4756
Sun.	11	16. 27	16. 29	60. 23	60. 29	4744	4736
M.	12	16. 30	16. 29	60. 31	60. 29	4734	4736
Tu.	13	16. 27	16. 25	60. 24	60. 15	4742	4753
W.	14	16. 22	16. 18	60. 4	59. 50	4766	4783
Th.	15	16. 14	16. 9	59. 34	59. 16	4803	4825
F.	16	16. 4	15. 59	58. 58	58. 39	4847	4870
Sa.	17	15. 54	15. 49	58. 20	58. 1	4894	4917
Sun.	18	15. 43	15. 38	57. 42	57. 23	4941	4965
M.	19	15. 33	15. 28	57. 5	56. 47	4988	5011
Tu.	20	15. 23	15. 19	56. 30	56. 14	5032	5053
W.	21	15. 15	15. 11	55. 58	55. 43	5073	5093
Th.	22	15. 7	15. 3	55. 29	55. 15	5111	5129
F.	23	15. 0	14. 57	55. 3	54. 52	5145	5160
Sa.	24	14. 54	14. 51	54. 41	54. 31	5174	5187
Sun.	25	14. 49	14. 47	54. 23	54. 16	5198	5207
M.	26	14. 45	14. 44	54. 10	54. 5	5215	5222
Tu.	27	14. 43	14. 43	54. 2	54. 1	5226	5227
W.	28	14. 43	14. 44	54. 1	54. 3	5227	5225
Th.	29	14. 45	14. 47	54. 7	54. 13	5219	5211
F.	30	14. 49	14. 52	54. 22	54. 33	5199	5185
Sa.	31	14. 55	15. 0	54. 46	55. 2	5168	5146

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	*Noon.* D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	*Midnight.* D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
α Pegasi.	1	63. 44. 34	62. 19. 49	60. 55. 6	59. 30. 26	58. 5. 50	56. 41. 18	55. 16. 50	53. 52. 27
	2	52. 28. 9	51. 3. 56	49. 39. 49	48. 15. 51	46. 52. 0	45. 28. 18	44. 4. 47	42. 41. 27
	3	41. 18. 18	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	1	110. 50. 52	109. 29. 39	108. 8. 22	106. 47. 1	105. 25. 35	104. 4. 4	102. 42. 27	101. 20. 44
	2	99. 58. 54	98. 36. 58	97. 14. 52	95. 52. 39	94. 30. 17	93. 7. 46	91. 45. 3	90. 22. 10
	3	88. 59. 6	87. 35. 50	86. 12. 20	84. 48. 37	83. 24. 42	82. 0. 33	80. 36. 9	79. 11. 29
	4	77. 46. 35	76. 21. 24	74. 55. 56	73. 30. 10	72. 4. 8	70. 37. 48	69. 11. 8	67. 44. 9
	5	66. 16. 52	64. 49. 14	63. 21. 15	61. 52. 56	60. 24. 16	58. 55. 15	57. 25. 52	55. 56. 8
	6	54. 26. 2	52. 55. 34	51. 24. 42	49. 53. 29	48. 21. 54	46. 49. 56	45. 17. 35	43. 44. 53
	7	42. 11. 49	40. 38. 23	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	12	- - -	- - -	- - -	- - -	63. 45. 8	61. 53. 58	60. 2. 53	58. 11. 56
	13	56. 21. 6	54. 30. 24	52. 39. 52	50. 49. 29	48. 59. 17	47. 9. 16	45. 19. 28	43. 29. 53
	14	41. 40. 31	39. 51. 24	38. 2. 31	36. 13. 55	34. 25. 35	32. 37. 32	30. 49. 47	29. 2. 21
	15	27. 15. 14	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	15	81. 15. 46	79. 28. 31	77. 41. 32	75. 54. 50	74. 8. 25	72. 22. 17	70. 36. 26	68. 50. 53
	16	67. 5. 38	65. 20. 41	63. 36. 2	61. 51. 40	60. 7. 37	58. 23. 52	56. 40. 24	54. 57. 14
	17	53. 14. 23	51. 31. 50	49. 49. 34	48. 7. 36	46. 25. 56	44. 44. 34	43. 3. 29	41. 22. 42
	18	39. 42. 13	- - -	- - -	- - -	- - -	- - -	- - -	- - -

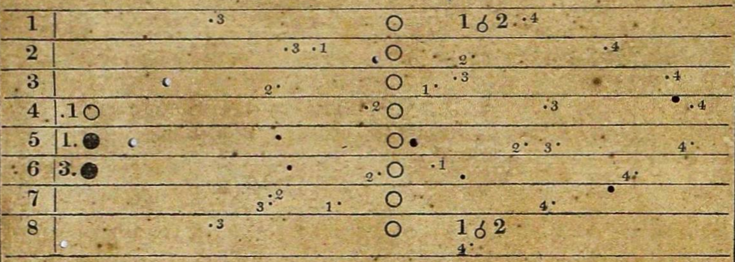
Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	18	85. 24. 5	83. 43. 32	82. 3. 15	80. 23. 14	78. 43. 29	77. 4. 0	75. 24. 45	73. 45. 46
	19	72. 7. 2	70. 28. 33	68. 50. 17	67. 12. 17	65. 34. 30	63. 56. 57	62. 19. 37	60. 42. 31
	20	59. 5. 39	57. 28. 59	55. 52. 32	54. 16. 18	52. 40. 17	51. 4. 29	49. 28. 51	47. 53. 26
	21	46. 18. 13	44. 43. 10	43. 8. 18	41. 33. 38	39. 59. 8	38. 24. 50	36. 50. 42	35. 16. 45
	22	33. 43. 0	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	22	88. 50. 51	87. 29. 9	86. 7. 37	84. 46. 17	83. 25. 8	82. 4. 11	80. 43. 29	79. 23. 0
	23	78. 2. 46	76. 42. 47	75. 23. 5	74. 3. 41	72. 44. 34	71. 25. 46	70. 7. 19	68. 49. 14
	24	67. 31. 30	66. 14. 10	64. 57. 15	63. 40. 45	62. 24. 42	- - -	- - -	- - -
Fomalhaut.	24	- - -	- - -	- - -	- - -	85. 48. 1	84. 25. 3	83. 2. 14	81. 39. 34
	25	80. 17. 5	78. 54. 46	77. 32. 37	76. 10. 40	74. 48. 54	73. 27. 20	72. 5. 59	70. 44. 52
	26	69. 23. 58	68. 3. 19	66. 42. 55	65. 22. 46	64. 2. 55	62. 43. 20	61. 24. 3	60. 5. 7
	27	58. 46. 30	57. 28. 15	56. 10. 23	54. 52. 54	53. 35. 50	- - -	- - -	- - -
α Pegasi.	27	- - -	- - -	- - -	- - -	72. 39. 12	71. 13. 56	69. 48. 44	68. 23. 37
	28	66. 58. 35	65. 33. 39	64. 8. 47	62. 44. 1	61. 19. 21	59. 54. 46	58. 30. 16	57. 5. 53
	29	55. 41. 37	54. 17. 26	52. 53. 24	51. 29. 30	50. 5. 44	48. 42. 8	47. 18. 42	45. 55. 27
	30	44. 32. 23	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	30	85. 28. 58	83. 59. 43	82. 30. 20	81. 0. 50	79. 31. 12	78. 1. 25	76. 31. 29	75. 1. 23
	31	73. 31. 8	72. 0. 43	70. 30. 5	68. 59. 17	67. 28. 17	65. 57. 4	64. 25. 38	62. 53. 58
	J. 1	61. 22. 4	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	29	- - -	- - -	- - -	- - -	- - -	- - -	121. 19. 27	119. 57. 33
	30	118. 35. 34	117. 13. 28	115. 51. 12	114. 28. 49	113. 6. 18	111. 43. 37	110. 20. 46	108. 57. 45
	31	107. 34. 34	106. 11. 12	104. 47. 38	103. 23. 52	101. 59. 53	100. 35. 41	99. 11. 14	97. 46. 33
	J. 1	96. 21. 37	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Antares.	1	42. 12. 6	43. 40. 57	45. 9. 52	46. 38. 52	48. 7. 55	49. 37. 3	51. 6. 18	52. 35. 39
	2	54. 5. 5	55. 34. 38	57. 4. 19	58. 34. 9	60. 4. 7	61. 34. 15	63. 4. 33	64. 35. 3
	3	66. 5. 43	67. 36. 35	69. 7. 40	70. 38. 58	72. 10. 30	73. 42. 15	75. 14. 16	76. 46. 32
	4	78. 19. 3	79. 51. 51	81. 24. 56	82. 58. 18	84. 31. 59	86. 5. 58	87. 40. 17	89. 14. 54
	5	90. 49. 52	92. 25. 10	94. 0. 49	95. 36. 49	97. 13. 10	98. 49. 54	100. 27. 0	102. 4. 29
	6	103. 42. 21	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	6	54. 55. 17	56. 14. 20	57. 34. 20	58. 55. 16	60. 17. 6	61. 39. 48	63. 3. 18	64. 27. 36
	7	65. 52. 42	67. 18. 31	68. 45. 1	70. 12. 12	71. 40. 1	- - -	- - -	- - -
The Sun.	13	39. 13. 49	40. 56. 36	42. 39. 17	44. 21. 51	46. 4. 19	47. 46. 39	49. 28. 49	51. 10. 49
	14	52. 52. 40	54. 34. 18	56. 15. 44	57. 56. 58	59. 37. 58	61. 18. 44	62. 59. 15	64. 39. 32
	15	66. 19. 34	67. 59. 20	69. 38. 50	71. 18. 4	72. 57. 2	74. 35. 43	76. 14. 8	77. 52. 15
	16	79. 30. 6	81. 7. 39	82. 44. 54	84. 21. 53	85. 58. 34	87. 34. 58	89. 11. 4	90. 46. 54
	17	92. 22. 26	93. 57. 40	95. 32. 38	97. 7. 18	98. 41. 41	100. 15. 47	101. 49. 36	103. 23. 10
	18	104. 56. 25	106. 29. 25	108. 2. 10	109. 34. 39	111. 6. 52	112. 38. 48	114. 10. 29	115. 41. 54
	19	117. 13. 4	118. 43. 59	120. 14. 39	- - -	- - -	- - -	- - -	- - -
Pollux.	16	- - -	- - -	- - -	- - -	31. 33. 20	33. 15. 26	34. 57. 22	36. 39. 9
	17	38. 20. 46	40. 2. 12	41. 43. 27	43. 24. 30	45. 5. 21	46. 45. 58	48. 26. 22	50. 6. 33
	18	51. 46. 30	53. 26. 13	55. 5. 43	56. 44. 59	58. 24. 1	60. 2. 48	61. 41. 22	63. 19. 43
	19	64. 57. 49	66. 35. 42	68. 13. 21	69. 50. 47	71. 28. 0	73. 5. 0	74. 41. 46	76. 18. 20
	20	77. 54. 42	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Regulus.	20	40. 54. 24	42. 30. 49	44. 7. 1	45. 43. 2	47. 18. 50	48. 54. 27	50. 29. 52	52. 5. 6
	21	53. 40. 9	55. 15. 2	56. 49. 44	58. 24. 16	59. 58. 37	61. 32. 46	63. 6. 46	64. 40. 35
	22	66. 14. 13	67. 47. 42	69. 21. 1	70. 54. 11	72. 27. 11	74. 0. 1	75. 32. 42	77. 5. 14
	23	78. 37. 36	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	23	24. 39. 6	26. 10. 46	27. 42. 21	29. 13. 50	30. 45. 14	32. 16. 32	33. 47. 44	35. 18. 50
	24	36. 49. 49	38. 20. 42	39. 51. 28	41. 22. 7	42. 52. 41	44. 23. 8	45. 53. 28	47. 23. 43
	25	48. 53. 51	50. 23. 52	51. 53. 49	53. 23. 39	54. 53. 23	56. 23. 2	57. 52. 35	59. 22. 3
	26	60. 51. 26	62. 20. 44	63. 49. 58	65. 19. 8	66. 48. 13	68. 17. 14	69. 46. 12	71. 15. 7
	27	72. 43. 56	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Antares.	27	26. 55. 34	28. 24. 30	29. 53. 23	31. 22. 12	32. 50. 59	34. 19. 46	35. 48. 31	37. 17. 14
	28	38. 45. 57	40. 14. 39	41. 43. 22	43. 12. 6	44. 40. 50	46. 9. 35	47. 38. 23	49. 7. 12
	29	50. 36. 4	52. 4. 59	53. 33. 57	55. 3. 0	56. 32. 6	58. 1. 16	59. 30. 33	60. 59. 55
	30	62. 29. 22	63. 58. 56	65. 28. 38	66. 58. 28	68. 28. 25	69. 58. 31	71. 28. 47	72. 59. 13
	31	74. 29. 49	76. 0. 35	77. 31. 34	79. 2. 45	80. 34. 7	82. 5. 43	83. 37. 33	85. 9. 37
	J. 1	86. 41. 56	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, at ½ an Hour past VIII o'Clock in the *Evening*.



Not visible the rest of this Month.

Days of the Week.	Days of the Month.	Sundays, and other remarkable Days.
Sun.	1	1*st Sun. aft. Tr.* Nicom.
M.	2	In 8 days of H. Tr. 2 ret.
Tu.	3	
W.	4	
Th.	5	*D. of Cumb. b.* Boniface.
F.	6	
Sa.	7	
Sun.	8	2*d Sunday after Trinity.*
M.	9	In 15 d. of H. Tr. 3 ret.
Tu.	10	
W.	11	*St. Barnabas.*
Th.	12	
F.	13	
Sa.	14	
Sun.	15	3*d Sunday after Trinity.*
M.	16	In 3 weeks of H. Tr. 4 ret.
Tu.	17	St. Alban.
W.	18	Trinity Term ends.
Th.	19	
F.	20	Tr. of Edw. K. of W. Sax.
Sa.	21	
Sun.	22	4*th Sunday after Trinity.*
M.	23	
Tu.	24	*Nativity of St. John Bapt.*
W.	25	
Th.	26	
F.	27	
Sa.	28	
Sun.	29	5*th Sun. af. Tr. St. Peter.*
M.	30	

Phases of the MOON.

	D. H. M.
☾ *Last Quarter*	1. 13. 22
● New Moon	8. 11. 48
☽ *First Quarter* . . .	15. 3. 23
○ Full Moon	23. 0. 3

Other *Phenomena.*

D. H. M.	
11. - - -	☿ Stationary.
21. 0. 1	☽ α ♏.
21. 19. 10	☉ enters ♋.
23. 17. 50	☽ ♅.

Days of the Week.	Days of the Month.	The Sun's Longitude.	The Sun's Rt. Ascen. in Time.	The Sun's Declin. North.	Diff.	Equation of Time. *Sub. from app. Time.*	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M.S.	M. S.	S.
Sun.	1	2. 10. 7. 22	4. 33. 57, 3	21. 59. 27	8. 12	2. 41, 7	8, 9
M.	2	2. 11. 4. 50	4. 38. 2, 8	22. 7. 39	7. 49	2. 32, 8	9, 3
Tu.	3	2. 12. 2. 17	4. 42. 8, 7	22. 15. 28	7. 25	2. 23, 5	9, 6
W.	4	2. 12. 59. 43	4. 46. 14, 9	22. 22. 53	7. 2	2. 13, 9	10, 1
Th.	5	2. 13. 57. 9	4. 50. 21, 6	22. 29. 55	6. 39	2. 3, 8	10, 5
F.	6	2. 14. 54. 34	4. 54. 28, 6	22. 36. 34	6. 15	1. 53, 3	10, 8
Sa.	7	2. 15. 51. 59	4. 58. 36, 0	22. 42. 49	5. 51	1. 42, 5	11, 1
Sun.	8	2. 16. 49. 23	5. 2. 43, 7	22. 48. 40	5. 27	1. 31, 4	11, 4
M.	9	2. 17. 46. 46	5. 6. 51, 7	22. 54. 7	5. 3	1. 20, 0	11, 6
Tu.	10	2. 18. 44. 9	5. 10. 59, 9	22. 59. 10	4. 39	1. 8, 4	11, 9
W.	11	2. 19. 41. 30	5. 15. 8, 4	23. 3. 49	4. 14	0. 56, 5	12, 1
Th.	12	2. 20. 38. 51	5. 19. 17, 1	23. 8. 3	3. 50	0. 44, 4	12, 3
F.	13	2. 21. 36. 11	5. 23. 26, 0	23. 11. 53	3. 25	0. 32, 1	12, 4
Sa.	14	2. 22. 33. 30	5. 27. 35, 0	23. 15. 18	3. 1	0. 19, 7	12, 6
Sun.	15	2. 23. 30. 47	5. 31. 44, 2	23. 18. 19	2. 36	0. 7, 1	12, 7
						Add.	
M.	16	2. 24. 28. 5	5. 35. 53, 5	23. 20. 55	2. 11	0. 5, 6	12, 8
Tu.	17	2. 25. 25. 21	5. 40. 2, 8	23. 23. 6	1. 47	0. 18, 4	12, 8
W.	18	2. 26. 22. 36	5. 44. 12, 2	23. 24. 53	1. 22	0. 31, 2	12, 9
Th.	19	2. 27. 19. 51	5. 48. 21, 7	23. 26. 15	0. 57	0. 44, 1	12, 9
F.	20	2. 28. 17. 5	5. 52. 31, 2	23. 27. 12	0. 32	0. 57, 0	12, 9
Sa.	21	2. 29. 14. 18	5. 56. 40, 8	23. 27. 44	0. 7	1. 9, 9	12, 9
Sun.	22	3. 0. 11. 31	6. 0. 50, 2	23. 27. 51	0. 17	1. 22, 8	12, 9
M.	23	3. 1. 8. 44	6. 4. 59, 7	23. 27. 34	0. 42	1. 35, 7	12, 8
Tu.	24	3. 2. 5. 56	6. 9. 9, 1	23. 26. 52	1. 7	1. 48, 5	12, 7
W.	25	3. 3. 3. 9	6. 13. 18, 4	23. 25. 45	1. 32	2. 1, 2	12, 7
Th.	26	3. 4. 0. 20	6. 17. 27, 6	23. 24. 13	1. 56	2. 13, 9	12, 5
F.	27	3. 4. 57. 32	6. 21. 36, 8	23. 22. 17	2. 21	2. 26, 4	12, 4
Sa.	28	3. 5. 54. 44	6. 25. 45, 8	23. 19. 56	2. 46	2. 38, 8	12, 3
Sun.	29	3. 6. 51. 56	6. 29. 54, 7	23. 17. 10	3. 10	2. 51, 1	12, 1
M.	30	3. 7. 49. 8	6. 34. 3, 3	23. 14. 0		3. 3, 2	

Days	Time of ☉'s Semidiam. passing Merid.	THE SUN's Semi-diameter.	THE SUN's Hourly Motion.	THE SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8, 1	15. 47, 6	2. 23, 6	0. 006237	10. 0. 17
7	1. 8, 3	15. 46, 9	2. 23, 4	0. 006587	9. 29. 58
13	1. 8, 5	15. 46, 3	2. 23, 2	0. 006847	9. 29. 39
19	1. 8, 6	15. 45, 9	2. 23, 1	0. 007026	9. 29. 20
25	1. 8, 6	15. 45, 6	2. 23, 0	0. 007147	9. 29. 1

The ECLIPSES of the SATELLITES of JUPITER are not visible this Month, Jupiter being too near the Sun.

THE PLANETS'

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Rt. Asc. in Time.	Passage Merid.
	S. D. M.	D.M.	S. D. M.	D.M.	D.M.	H. M.	H. M.
☿			*MERCURY.*			Inf. ☌ 24[d]. 2½[h].	
1	6. 25. 59	2. 26 N	3. 3. 0	1. 21 N	24. 47 N	6. 13	1. 39
4	7. 5. 26	1. 19	3. 4. 59	0. 49	24. 11	6. 22	1. 35
7	7. 14. 26	0. 13 N	3. 6. 19	0. 9 N	23. 28	6. 28	1. 29
10	7. 23. 5	0. 50 S	3. 6. 59	0. 36 S	22. 40	6. 30	1. 19
13	8. 1. 29	1. 51	3. 6. 57	1. 25	21. 52	6. 30	1. 6
16	8. 9. 46	2. 48	3. 6. 16	2. 16	21. 3	6. 27	0. 51
19	8. 18. 0	3. 42	3. 5. 3	3. 4	20. 18	6. 22	0. 33
22	8. 26. 17	4. 31	3. 3. 26	3. 46	19. 39	6. 15	0. 14
25	9. 4. 44	5. 15	3. 1. 41	4. 18	19. 8	6. 7	23. 47
28	9. 13. 25	5. 53	3. 0. 2	4. 37	18. 50	6. 0	23. 28
30	9. 19. 23	6. 15	2. 29. 8	4. 43	18. 45	5. 56	23. 16
♀			*VENUS.*				
1	5. 17. 24	3. 23 N	3. 17. 47	2. 5 N	24. 21 N	7. 18	2. 44
7	5. 27. 8	3. 19	3. 24. 44	2. 7	23. 17	7. 48	2. 50
13	6. 6. 50	3. 9	4. 1. 37	2. 6	21. 52	8. 17	2. 54
19	6. 16. 31	2. 54	4. 8. 28	2. 1	20. 7	8. 46	2. 57
25	6. 26. 11	2. 33	4. 15. 12	1. 52	18. 5	9. 13	3. 0
♂			*MARS.*				
1	1. 14. 19	0. 7 S	1. 24. 50	0. 5 S	18. 55 N	3. 30	22. 55
7	1. 17. 41	0. 1 S	1. 29. 7	0. 1 S	19. 58	3. 48	22. 48
13	1. 21. 1	0. 5 N	2. 3. 23	0. 3 N	20. 55	4. 5	22. 41
19	1. 24. 18	0. 12	2. 7. 37	0. 7	21. 43	4. 23	22. 34
25	1. 27. 34	0. 18	2. 11. 48	0. 11	22. 25	4. 41	22. 27
♃			*JUPITER.*			☌ 10[d]. 3¼[h].	
1	2. 18. 4	0. 28 S	2. 16. 45	0. 23 S	22. 25 N	5. 3	0. 29
7	2. 18. 36	0. 27	2. 18. 8	0. 23	22. 34	5. 9	0. 10
13	2. 19. 7	0. 26	2. 19. 32	0. 22	22. 41	5. 15	23. 48
19	2. 19. 38	0. 26	2. 20. 55	0. 21	22. 48	5. 21	23. 29
25	2. 20. 9	0. 25	2. 22. 17	0. 21	22. 53	5. 26	23. 10
♄			*SATURN.*				
1	1. 14. 23	2. 19 S	1. 16. 54	2. 6 S	14. 53 N	3. 0	22. 23
7	1. 14. 36	2. 19	1. 17. 37	2. 6	15. 5	3. 3	22. 1
13	1. 14. 49	2. 18	1. 18. 19	2. 7	15. 16	3. 6	21. 39
19	1. 15. 2	2. 18	1. 18. 59	2. 7	15. 27	3. 9	21. 17
25	1. 15. 15	2. 18	1. 19. 38	2. 8	15. 36	3. 11	20. 55
♅			*GEORGIAN.*				
1	9. 9. 14	0. 20 S	9. 10. 45	0. 21 S	23. 23 S	18. 47	14. 10
11	9. 9. 21	0. 21	9. 10. 24	0. 22	23. 25	18. 45	13. 28
21	9. 9. 27	0. 21	9. 10. 1	0. 22	23. 27	18. 44	12. 45

Days of the Week.	Days of the Month.	The MOON's Longitude. Noon. S. D. M. S.	Longitude. Midnight. S. D. M. S.	Latitude. Noon. D. M. S.	Latitude. Midnight. D. M. S.
Sun.	1	11. 3. 45. 14	11. 9. 56. 47	2. 57. 24 N	3. 23. 45 N
M.	2	11. 16. 13. 20	11. 22. 35. 28	3. 48. 1	4. 9. 49
Tu.	3	11. 29. 3. 42	0. 5. 38. 28	4. 28. 47	4. 44. 33
W.	4	0. 12. 20. 7	0. 19. 8. 53	4. 56. 45	5. 5. 0
Th.	5	0. 26. 4. 51	1. 3. 7. 55	5. 8. 58	5. 8. 21
F.	6	1. 10. 17. 47	1. 17. 33. 55	5. 2. 56	4. 52. 36
Sa.	7	1. 24. 55. 38	2. 2. 22. 7	4. 37. 18	4. 17. 10
Sun.	8	2. 9. 52. 20	2. 17. 25. 7	3. 52. 27	3. 23. 30
M.	9	2. 24. 59. 16	3. 2. 33. 33	2. 50. 51	2. 15. 9
Tu.	10	3. 10. 6. 44	3. 17. 37. 43	1. 37. 7	0. 57. 32 N
W.	11	3. 25. 5. 31	4. 2 29. 16	0. 17. 12 N	0. 23. 6 S
Th.	12	4. 9. 48. 18	4. 17. 2. 7	1. 2. 37 S	1. 40. 40
F.	13	4. 24. 10. 21	5. 1. 12. 50	2. 16. 41	2. 50. 7
Sa.	14	5. 8. 9. 30	5. 15. 0. 24	3. 20. 33	3. 47. 41
Sun.	15	5. 21. 45. 42	5. 28. 25. 37	4. 11. 16	4. 31. 6
M.	16	6. 5. 0. 24	6. 11. 30. 22	4. 47. 4	4. 59. 8
Tu.	17	6. 17. 55. 52	6. 24. 17. 14	5. 7. 17	5. 11. 34
W.	18	7. 0. 34. 48	7. 6. 48. 54	5. 12. 2	5. 8. 47
Th.	19	7. 12. 59. 50	7. 19. 7. 55	5. 1. 57	4. 51. 42
F.	20	7. 25. 13. 26	8. 1. 16. 40	4. 38. 11	4. 21. 37
Sa.	21	8. 7. 17. 52	8. 13. 17. 18	4. 2. 14	3. 40. 15
Sun.	22	8. 19. 15. 11	8. 25. 11. 46	3. 15. 55	2. 49. 31
M.	23	9. 1. 7. 18	9. 7. 2. 1	2. 21. 21	1. 51. 41
Tu.	24	9. 12. 56. 12	9. 18. 50. 7	1. 20. 49	0. 49. 6 S
W.	25	9. 24. 44. 4	10. 0. 38. 24	0. 16. 49 S	0. 15. 43 N
Th.	26	10. 6. 33. 28	10. 12. 29. 38	0. 48. 11 N	1. 20. 14
F.	27	10. 18. 27. 19	10. 24. 26. 59	1. 51. 33	2. 21. 50
Sa.	28	11. 0. 29. 4	11. 6. 34. 5	2. 50. 47	3. 18. 1
Sun.	29	11. 12. 42. 30	11. 18. 54. 52	3. 43. 14	4. 6. 8
M.	30	11. 25. 11. 40	0. 1. 33. 25	4. 26. 21	4. 43. 35

Days of the Month.	Age.	Pass. Merid.	THE MOON'S Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	23	18. 16	334. 34. 55	340. 12. 5	7. 23. 6 S	4. 42. 4 S
2	24	18. 58	345. 50. 50	351. 33. 9	1. 56. 18 S	0. 52. 55 N
3	25	19. 43	357. 21. 12	3. 17. 9	3. 44. 7 N	6. 35. 41
4	26	20. 32	9. 23. 15	15. 41. 46	9. 25. 46	12. 12. 10
5	27	21. 25	22. 14. 50	29. 4. 19	14. 52. 23	17. 23. 35
6	28	22. 23	36. 11. 36	43. 37. 18	19. 42. 33	21. 45. 52
7	29	23. 26	51. 21. 5	59. 21. 22	23. 29. 56	24. 51. 21
8	1	6	67. 35. 11	75. 58. 11	25. 47. 4	26. 14. 41
9	2	0. 32	84. 25. 6	92. 50. 16	26. 12. 52	25. 41. 29
10	3	1. 38	101. 8. 16	109. 14. 34	24. 41. 33	23. 15. 8
11	4	2. 39	117. 5. 56	124. 40. 29	21. 25. 9	19. 15. 1
12	5	3. 36	131. 57. 41	138. 58. 3	16. 48. 22	14. 8. 48
13	6	4. 28	145. 42. 51	152. 13. 59	11. 19. 41	8. 24. 10
14	7	5. 16	158. 33. 32	164. 43. 46	5. 25. 1 N	2. 24. 41 N
15	8	6. 2	170. 46. 58	176. 45. 23	0. 34. 40 S	3. 31. 6 S
16	9	6. 47	182. 41. 8	188. 36. 10	6. 22. 52	9. 8. 23
17	10	7. 32	194. 32. 17	200. 31. 3	11. 46. 12	14. 14. 54
18	11	8. 18	206. 33. 48	212. 41. 33	16. 33. 7	18. 39. 30
19	12	9. 5	218. 54. 59	225. 14. 23	20. 32. 47	22. 11. 44
20	13	9. 54	231. 39. 35	238. 10. 1	23. 35. 12	24. 42. 11
21	14	10. 44	244. 44. 43	251. 22. 15	25. 31. 51	26. 3. 35
22	15	11. 35	258. 0. 58	264. 39. 4	26. 17. 0	26. 12. 2
23	16	12. 25	271. 14. 42	277. 46. 10	25. 48. 55	25. 8. 10
24	17	13. 13	284. 12. 4	290. 31. 18	24. 10. 31	22. 56. 58
25	18	13. 59	296. 43. 12	302. 47. 30	21. 28. 38	19. 46. 44
26	19	14. 43	308. 44. 22	314. 34. 20	17. 52. 33	15. 47. 23
27	20	15. 26	320. 18. 13	325. 57. 7	13. 32. 34	11. 9. 20
28	21	16. 7	331. 32. 22	337. 5. 30	8. 38. 56	6. 2. 35
29	22	16. 49	342. 38. 11	348. 12. 16	3. 21. 30 S	0. 36. 56 S
30	23	17. 31	353. 49. 41	359. 32. 30	2. 9. 47 N	4. 57. 16 N

Days of the Week.	Days of the Month.	The Moon's Semidiameter. Noon. M. S.	Semidiameter. Midnight. M. S.	Hor. Parallax. Noon. M. S.	Hor. Parallax. Midnight. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
Sun.	1	15. 5	15. 10	55. 20	55. 39	5123	5098
M.	2	15. 16	15. 22	56. 1	56. 25	5070	5039
Tu.	3	15. 29	15. 36	56. 51	57. 18	5005	4971
W.	4	15. 44	15. 52	57. 46	58. 14	4936	4901
Th.	5	16. 0	16. 8	58. 43	59. 11	4865	4831
F.	6	16. 15	16. 21	59. 37	60. 1	4799	4770
Sa.	7	16. 27	16. 32	60. 22	60. 40	4745	4723
Sun.	8	16. 36	16. 38	60. 54	61. 4	4707	4695
M.	9	16. 40	16. 40	61. 9	61. 9	4689	4689
Tu.	10	16. 38	16. 35	61. 4	60. 56	4695	4704
W.	11	16. 32	16. 28	60. 42	60. 26	4721	4740
Th.	12	16. 23	16. 17	60. 7	59. 44	4763	4791
F.	13	16. 11	16. 4	59. 20	58. 56	4820	4849
Sa.	14	15. 57	15. 50	58. 31	58. 5	4880	4912
Sun.	15	15. 43	15. 36	57. 40	57. 16	4943	4974
M.	16	15. 30	15. 24	56. 53	56. 31	5003	5031
Tu.	17	15. 19	15. 14	56. 11	55. 52	5057	5081
W.	18	15. 9	15. 4	55. 34	55. 18	5105	5125
Th.	19	15. 0	14. 57	55. 3	54. 51	5145	5161
F.	20	14. 54	14. 51	54. 41	54. 29	5174	5190
Sa.	21	14. 48	14. 46	54. 20	54. 12	5202	5213
Sun.	22	14. 44	14. 43	54. 6	54. 1	5221	5227
M.	23	14. 42	14. 42	53. 58	53. 56	5231	5234
Tu.	24	14. 42	14. 42	53. 55	53. 56	5235	5234
W.	25	14. 42	14. 43	53. 58	54. 2	5231	5226
Th.	26	14. 45	14. 47	54. 8	54. 15	5218	5209
F.	27	14. 49	14. 52	54. 24	54. 34	5197	5183
Sa.	28	14. 56	15. 0	54. 46	55. 1	5168	5148
Sun.	29	15. 4	15. 9	55. 18	55. 36	5125	5102
M.	30	15. 15	15. 20	55. 56	56. 18	5076	5048

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	96. 21. 37	94. 56. 26	93. 30. 59	92. 5. 16	90. 39. 15	89. 12. 57	87. 46. 20	86. 19. 25
	2	84. 52. 11	83. 24. 37	81. 56. 43	80. 28. 28	78. 59. 52	77. 30. 54	76. 1. 35	74. 31. 52
	3	73. 1. 48	71. 31. 20	70. 0. 28	68. 29. 12	66. 57. 33	65. 25. 29	63. 53. 0	62. 20. 6
	4	60. 46. 47	59. 13. 2	57. 38. 52	56. 4. 16	54. 29. 15	52. 53. 47	51. 17. 54	49. 41. 35
	5	48. 4. 50	46. 27. 39	44. 50. 3	43. 12. 3	41. 33. 38	39. 54. 49	- - -	- - -
Regulus.	10	- - -	- - -	- - -	- - -	39. 44. 50	37. 52. 32	36. 0. 26	34. 8. 36
	11	32. 17. 2	30. 25. 46	28. 34. 51	26. 44. 19	24. 54. 9	23. 4. 25	21. 15. 9	19. 26. 21
	12	17. 38. 5	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	12	71. 33. 18	69. 44. 7	67. 55. 16	66. 6. 48	64. 18. 42	62. 30. 58	60. 43. 37	58. 56. 38
	13	57. 10. 3	55. 23. 51	53. 38. 3	51. 52. 39	50. 7. 39	48. 23. 2	46. 38. 50	44. 55. 2
	14	43. 11. 39	41. 28. 40	39. 46. 5	38. 3. 55	36. 22. 10	34. 40. 48	32. 59. 51	31. 19. 20
	15	29. 39. 13	27. 59. 32	26. 20. 16	24. 41. 27	23. 3. 3	- - -	- - -	- - -
Antares.	15	- - -	- - -	- - -	- - -	68. 38. 1	66. 59. 5	65. 20. 28	63. 42. 11
	16	62. 4. 14	60. 26. 36	58. 49. 16	57. 12. 14	55. 35. 31	53. 59. 5	52. 22. 56	50. 47. 3
	17	49. 11. 27	47. 36. 7	46. 1. 2	44. 26. 12	42. 51. 38	41. 17. 18	39. 43. 11	38. 9. 19
	18	36. 35. 40	35. 2. 14	33. 28. 59	31. 55. 57	30. 23. 7	- - -	- - -	- - -
α Aquilæ.	18	- - -	- - -	- - -	- - -	86. 0. 36	84. 39. 30	83. 18. 39	81. 58. 5
	19	80. 37. 48	79. 17. 47	77. 58. 4	76. 38. 37	75. 19. 28	74. 0. 35	72. 41. 59	71. 23. 42
	20	70. 5. 44	68. 48. 6	67. 30. 50	66. 13. 56	64. 57. 26	63. 41. 21	62. 25. 41	61. 10. 29
	21	59. 55. 45	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	••IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Fomalhaut.	21	83. 2. 4	81. 39. 59	80. 18. 2	78. 56. 14	77. 34. 35	76. 13. 5	74. 51. 47	73. 30. 38
	22	72. 9. 41	70. 48. 54	69. 28. 21	68. 8. 0	66. 47. 53	65. 27. 59	64. 8. 21	62. 48. 59
	23	61. 29. 54	60. 11. 6	58. 52. 37	57. 34. 29	56. 16. 43	54. 59. 18	53. 42. 20	52. 25. 49
	24	51. 9. 45	49. 54. 13	48. 39. 13	47. 24. 48	46. 10. 59	- - -	- - -	- - -
α Pegasi.	24	- - -	- - -	- - -	- - -	64. 12. 27	62. 47. 31	61. 22. 41	59. 57. 56
	25	58. 33. 16	57. 8. 43	55. 44. 17	54. 19. 59	52. 55. 49	51. 31. 47	50. 7. 54	48. 44. 13
	26	47. 20. 43	45. 57. 26	44. 34. 23	43. 11. 35	41. 49. 3	- - -	- - -	- - -
α Arietis.	26	- - -	- - -	- - -	- - -	82. 34. 54	81. 5. 39	79. 36. 17	78. 6. 49
	27	76. 37. 16	75. 7. 36	73. 37. 49	72. 7. 55	70. 37. 54	69. 7. 46	67. 37. 29	66. 7. 4
	28	64. 36. 30	63. 5. 46	61. 34. 53	60. 3. 49	58. 32. 36	57. 1. 12	55. 29. 37	53. 57. 51
	29	52. 25. 53	50. 53. 42	49. 21. 18	47. 48. 42	46. 15. 53	44. 42. 50	43. 9. 34	41. 36. 4
	30	40. 2. 21	38. 28. 22	36. 54. 10	35. 19. 44	33. 45. 4	32. 10. 11	30. 35. 4	28. 59. 43
	J. 1	27. 24. 10	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	28	- - -	- - -	- - -	- - -	119. 45. 59	118. 21. 21	116. 56. 30	115. 31. 27
	29	114. 6. 11	112. 40. 41	111. 14. 57	109. 48. 58	108. 22. 44	106. 56. 15	105. 29. 29	104. 2. 27
	30	102. 35. 9	101. 7. 33	99. 39. 40	98. 11. 27	96. 42. 57	95. 14. 7	93. 44. 56	92. 15. 25
	J. 1	90. 45. 34	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	1	86. 41. 55	88. 14. 29	89. 47. 19	91. 20. 26	92. 53. 49	94. 27. 30	96. 1. 29	97. 35. 46
	2	99. 10. 23	100. 45. 19	102. 20. 36	103. 56. 14	105. 32. 13	- - -	- - -	- - -
α Aquilæ.	2	- - -	- - -	- - -	- - -	56. 16. 8	57. 34. 33	58. 53. 49	60. 13. 55
	3	61. 34. 50	62. 56. 32	64. 19. 0	65. 42. 13	67. 6. 8	68. 30. 44	69. 56. 0	71. 21. 55
	4	72. 48. 28	74. 15. 37	75. 43. 22	77. 11. 41	78. 40. 33	- - -	- - -	- - -
Fomalhaut.	4	- - -	- - -	- - -	- - -	53. 39. 21	55. 8. 41	56. 38. 55	58. 10. 0
	5	59. 41. 55	61. 14. 38	62. 48. 6	64. 22. 18	65. 57. 13	67. 32. 48	69. 9. 0	70. 45. 50
	6	72. 23. 16	74. 1. 15	75. 39. 45	77. 18. 45	78. 58. 13	- - -	- - -	- - -
The Sun.	11	- - -	- - -	- - -	40. 35. 47	42. 19. 11	44. 2. 19	45. 45. 9	47. 27. 42
	12	49. 9. 57	50. 51. 52	52. 33. 27	54. 14. 42	55. 55. 36	57. 36. 8	59. 16. 19	60. 56. 8
	13	62. 35. 35	64. 14. 39	65. 53. 21	67. 31. 40	69. 9. 36	70. 47. 9	72. 24. 19	74. 1. 6
	14	75. 37. 30	77. 13. 31	78. 49. 9	80. 24. 25	81. 59. 19	83. 33. 50	85. 7. 59	86. 41. 46
	15	88. 15. 12	89. 48. 15	91. 20. 58	92. 53. 20	94. 25. 21	95. 57. 1	97. 28. 22	98. 59. 23
	16	100. 30. 5	102. 0. 28	103. 30. 32	105. 0. 19	106. 29. 47	107. 58. 58	109. 27. 52	110. 56. 29
	17	112. 24. 50	113. 52. 55	115. 20. 44	116. 48. 19	118. 15. 38	119. 42. 43	- - -	- - -
Regulus.	15	24. 48. 20	26. 27. 57	28. 7. 18	29. 46. 21	31. 25. 6	33. 3. 34	34. 41. 45	36. 19. 38
	16	37. 57. 14	39. 34. 32	41. 11. 33	42. 48. 17	44. 24. 45	46. 0. 55	47. 36. 50	49. 12. 29
	17	50. 47. 52	52. 23. 0	53. 57. 53	55. 32. 31	57. 6. 55	58. 41. 5	60. 15. 1	61. 48. 45
	18	63. 22. 15	64. 55. 32	66. 28. 38	68. 1. 32	69. 34. 14	71. 6. 45	72. 39. 5	74. 11. 14
	19	75. 43. 13	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Spica ♍.	19	21. 46. 34	23. 17. 36	24. 48. 33	26. 19. 26	27. 50. 15	29. 20. 59	30. 51. 37	32. 22. 11
	20	33. 52. 40	35. 23. 3	36. 53. 20	38. 23. 32	39. 53. 39	41. 23. 40	42. 53. 36	44. 23. 27
	21	45. 53. 13	47. 22. 55	48. 52. 32	50. 22. 5	51. 51. 34	53. 20. 58	54. 50. 18	56. 19. 35
	22	57. 48. 48	59. 17. 58	60. 47. 4	62. 16. 8	63. 45. 9	65. 14. 7	66. 43. 3	68. 11. 57
	23	69. 40. 48	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Antares.	23	23. 52. 14	25. 21. 11	26. 50. 7	28. 19. 1	29. 47. 53	31. 16. 44	32. 45. 34	34. 14. 24
	24	35. 43. 13	37. 12. 2	38. 40. 50	40. 9. 39	41. 38. 28	43. 7. 17	44. 36. 7	46. 4. 58
	25	47. 33. 50	49. 2. 44	50. 31. 40	52. 0. 38	53. 29. 38	54. 58. 41	56. 27. 47	57. 56. 56
	26	59. 26. 9	60. 55. 25	62. 24. 45	63. 54. 10	65. 23. 40	66. 53. 14	68. 22. 55	69. 52. 41
	27	71. 22. 34	72. 52. 33	74. 22. 40	75. 52. 54	77. 23. 15	78. 53. 44	80. 24. 22	81. 55. 10
	28	83. 26. 6	84. 57. 12	86. 28. 29	87. 59. 57	89. 31. 36	91. 3. 26	92. 35. 28	94. 7. 43
	29	95. 40. 10	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	29	48. 24. 21	49. 35. 21	50. 47. 21	52. 0. 20	53. 14. 16	54. 29. 6	55. 44. 48	57. 1. 21
	30	58. 18. 41	59. 36. 46	60. 55. 35	62. 15. 7	63. 35. 20	64. 56. 13	66. 17. 44	67. 39. 52
	J. 1	69. 2. 35	- - -	- - -	- - -	- - -	- - -	- - -	- - -

THE SATELLITES OF JUPITER

are not visible this Month,

JUPITER being too near the SUN.

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
Tu.	1	Oxf. Act and Camb. Com.
W.	2	Visit. of B. V. Mary.
Th.	3	Translation of St. Martin.
F.	4	Cambridge Term ends.
Sa.	5	Oxford Term ends.
Sun.	6	*6th Sunday after Trinity.*
M.	7	
Tu.	8	
W.	9	
Th.	10	
F.	11	
Sa.	12	
Sun.	13	*7th Sunday after Trinity.*
M.	14	
Tu.	15	Swithin.
W.	16	
Th.	17	
F.	18	
Sa.	19	
Sun.	20	*8th Sunday after Trinity.*
M.	21	[Margaret.
Tu.	22	Magdalen.
W.	23	
Th.	24	
F.	25	*St. James.*
Sa.	26	St. Anne.
Sun.	27	*9th Sunday after Trinity.*
M.	28	
Tu.	29	
W.	30	
Th.	31	

Phases of the MOON.

	D. H. M.
☾ *Last Quarter* . .	1. 1. 31
● New Moon . . .	7. 18. 40
☽ *First Quarter* . .	14. 13. 21
○ Full Moon . . .	22. 15. 28
☾ *Last Quarter* . .	30. 10. 50

Other *Phænomena.*

D. H. M.	
5. - -	☿ Stationary.
6. - -	♀ ☌ ♌, ♀ 57′ N. of ∗.
7. - -	⊙ eclipsed, invisible.
17. - -	♃ ♂, ♃ 45¼′ S. of ♂.
18. 5. 50	☽ ☌ ♏.
20. 21. 37	☽ ♅.
22. - -	☽ eclips. partly vis.
23. 5. 57	⊙ enters ♌.

Days of the Week.	Days of the Month.	The Sun's Longitude.	The Sun's Rt. Ascen. in Time.	The Sun's Declin. North.	Diff.	Equation of Time. *Add to app. Time.*	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	M. S.	S.
Tu.	1	3. 8. 46. 21	6. 38. 11, 8	23. 10. 25	3. 59	3. 15, 1	11, 7
W.	2	3. 9. 43. 33	6. 42. 20, 1	23. 6. 26	4. 23	3. 26, 8	11, 4
Th.	3	3. 10. 40. 47	6. 46. 28, 1	23. 2. 3	4. 47	3. 38, 2	11, 2
F.	4	3. 11. 38. 0	6. 50. 35, 9	22. 57. 16	5. 12	3. 49, 4	10, 9
Sa.	5	3. 12. 35. 14	6. 54. 43, 4	22. 52. 4	5. 35	4. 0, 3	10, 6
Sun.	6	3. 13. 32. 28	6. 58. 50, 6	22. 46. 29	5. 59	4. 10, 9	10, 3
M.	7	3. 14. 29. 42	7. 2. 57, 5	22. 40. 30	6. 23	4. 21, 2	10, 0
Tu.	8	3. 15. 26. 57	7. 7. 4, 0	22. 34. 7	6. 46	4. 31, 2	9, 5
W.	9	3. 16. 24. 12	7. 11. 10, 1	22. 27. 21	7. 10	4. 40, 7	9, 2
Th.	10	3. 17. 21. 27	7. 15. 15, 9	22. 20. 11	7. 32	4. 49, 9	8, 7
F.	11	3. 18. 18. 42	7. 19. 21, 2	22. 12. 39	7. 56	4. 58, 6	8, 2
Sa.	12	3. 19. 15. 56	7. 23. 26, 0	22. 4. 43	8. 18	5. 6, 8	7, 8
Sun.	13	3. 20. 13. 11	7. 27. 30, 4	21. 56. 25	8. 41	5. 14, 6	7, 3
M.	14	3. 21. 10. 26	7. 31. 34, 3	21. 47. 44	9. 3	5. 21, 9	6, 8
Tu.	15	3. 22. 7. 41	7. 35. 37, 6	21. 38. 41	9. 25	5. 28, 7	6, 3
W.	16	3. 23. 4. 56	7. 39. 40, 5	21. 29. 16	9. 48	5. 35, 0	5, 8
Th.	17	3. 24. 2. 11	7. 43. 42, 9	21. 19. 28	10. 9	5. 40, 8	5, 3
F.	18	3. 24. 59. 26	7. 47. 44, 7	21. 9. 19	10. 30	5. 46, 1	4, 7
Sa.	19	3. 25. 56. 41	7. 51. 46, 0	20. 58. 49	10. 51	5. 50, 8	4, 1
Sun.	20	3. 26. 53. 58	7. 55. 46, 7	20. 47. 58	11. 13	5. 54, 9	3, 6
M.	21	3. 27. 51. 13	7. 59. 46, 8	20. 36. 45	11. 33	5. 58, 5	3, 0
Tu.	22	3. 28. 48. 30	8. 3. 46, 4	20. 25. 12	11. 54	6. 1, 5	2, 5
W.	23	3. 29. 45. 47	8. 7. 45, 5	20. 13. 18	12. 14	6. 4, 0	1, 9
Th.	24	4. 0. 43. 5	8. 11. 43, 9	20. 1. 4	12. 35	6. 5, 9	1, 3
F.	25	4. 1. 40. 24	8. 15. 41, 8	19. 48. 29	12. 54	6. 7, 2	0, 8
Sa.	26	4. 2. 37. 43	8. 19. 39, 1	19. 35. 35	13. 13	6. 8, 0	0, 1
Sun.	27	4. 3. 35. 3	8. 23. 35, 8	19. 22. 22	13. 33	6. 8, 1	0, 4
M.	28	4. 4. 32. 25	8. 27. 32, 0	19. 8. 49	13. 52	6. 7, 7	1, 0
Tu.	29	4. 5. 29. 47	8. 31. 27, 5	18. 54. 57	14. 11	6. 6, 7	1, 5
W.	30	4. 6. 27. 11	8. 35. 22, 5	18. 40. 46	14. 30	6. 5, 2	2, 2
Th.	31	4. 7. 24. 36	8. 39. 16, 9	18. 26. 16		6. 3, 0	

Days.	Time of ⊙'s Semidiam. passing Merid.	The SUN's Semi-diameter.	The SUN's Hourly Motion.	The SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 8, 5	15. 45, 5	2. 23, 0	0. 007213	9. 28. 42
7	1. 8, 3	15. 45, 5	2. 23, 0	0. 007205	9. 28. 23
13	1. 8, 0	15. 45, 8	2. 23, 1	0. 007100	9. 28. 4
19	1. 7, 5	15. 46, 1	2. 23, 2	0. 006915	9. 27. 45
25	1. 7, 0	15. 46, 6	2. 23, 3	0. 006674	9. 27. 26

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite. Immersions. Days.	H. M. S.	II. Satellite. Immersions. Days.	H. M. S.	III. Satellite. Days.	H. M. S.
11	13. 11. 32	9	5. 5. 1	9	21. 50. 53 Im.
13	7. 40. 10	12	18. 22. 27	10	0. 33. 17 E.
15	2. 8. 43	16	7. 40. 4	17	1. 50. 16 Im.
16	20. 37. 19	19	20. 57. 30	17	4. 33. 39 E.
*18	15. 5. 51	23	10. 15. 10	24	5. 49. 26 Im.
20	9. 34. 27	26	23. 32. 38	24	8. 33. 48 E.
22	4. 2. 58	30	12. 50. 20	31	9. 48. 13 Im.
23	22. 31. 33			31	12. 33. 36 E.
25	17. 0. 3				
27	11. 28. 37				
29	5. 57. 6				
31	0. 25. 39				

IV. Satellite.	

THE PLANETS'

Days	Heliocentric Long. S. D. M.	Heliocentric Lat. D.M.	Geocentric Long. S. D. M.	Geocentric Lat. D.M.	Declin. D.M.	Rt. Asc. in Time. H. M.	Passage Merid. H. M.
☿			**MERCURY.**			Gr. Elong. 16^{d}.	
1	9. 22. 26	6. 25 S	2. 28. 46	4. 43 S	18. 45 N	5. 55	23. 12
4	10. 1. 56	6. 47	2. 28. 5	4. 36	18. 51	5. 52	22. 57
7	10. 12. 1	6. 59	2. 28. 5	4. 17	19. 10	5. 52	22. 46
10	10. 22. 51	6. 57	2. 28. 52	3. 49	19. 39	5. 55	22. 38
13	11. 4. 35	6. 39	3. 0. 26	3. 14	20. 14	6. 2	22. 34
16	11. 17. 22	6. 0	3. 2. 47	2. 34	20. 52	6. 12	22. 33
19	0. 1. 23	4. 57	3. 5. 55	1. 52	21. 28	6. 25	22. 35
22	0. 16. 44	3. 28	3. 9. 46	1. 0	21. 57	6. 42	22. 41
25	1. 3. 25	1. 34 S	3. 14. 17	0. 28 S	22. 14	7. 2	22. 49
28	1. 21. 18	0. 37 N	3. 19. 25	0. 10 N	22. 13	7. 24	23. 1
31	2. 10. 0	2. 50	3. 25. 2	0. 43	21. 51	7. 48	23. 14
♀			**VENUS.**				
1	7. 5. 49	2. 9 N	4. 21. 52	1. 39 N	15. 48 N	9. 39	3. 1
7	7. 15. 25	1. 41	4. 28. 25	1. 22	13. 19	10. 4	3. 1
13	7. 25. 0	1. 10	5. 4. 50	1. 0	10. 40	10. 28	3. 1
19	8. 4. 33	0. 37	5. 11. 8	0. 34	7. 55	10. 51	2. 59
25	8. 14. 5	0. 4	5. 17. 14	0. 3	5. 6	11. 13	2. 57
♂			**MARS.**				
1	2. 0. 47	0. 24 N	2. 15. 58	0. 15 N	22. 59 N	4. 59	22. 20
7	2. 3. 59	0. 30	2. 20. 5	0. 19	23. 25	5. 17	22. 13
13	2. 7. 8	0. 36	2. 24. 11	0. 23	23. 43	5. 35	22. 6
19	2. 10. 16	0. 42	2. 28. 15	0. 27	23. 54	5. 52	22. 0
25	2. 13. 21	0. 47	3. 2. 17	0. 31	23. 58	6. 10	21. 53
♃			**JUPITER.**				
1	2. 20. 40	0. 24 S	2. 23. 39	0. 20 S	23. 58 N	5. 32	22. 51
7	2. 21. 11	0. 24	2. 25. 0	0. 20	23. 2	5. 38	22. 32
13	2. 21. 42	0. 23	2. 26. 20	0. 20	23. 5	5. 44	22. 14
19	2. 22. 13	0. 22	2. 27. 38	0. 19	23. 7	5. 50	21. 55
25	2. 22. 44	0. 22	2. 28. 55	0. 19	23. 9	5. 55	21. 37
♄			**SATURN.**				
1	1. 15. 28	2. 18 S	1. 20. 15	2. 9 S	15. 46 N	3. 14	20. 32
7	1. 15. 41	2. 17	1. 20. 50	2. 9	15. 54	3. 16	20. 10
13	1. 15. 54	2. 17	1. 21. 22	2. 10	16. 2	3. 18	19. 48
19	1. 16. 8	2. 17	1. 21. 52	2. 11	16. 8	3. 20	19. 25
25	1. 16. 21	2. 17	1. 22. 19	2. 12	16. 14	3. 22	19. 3
♅			**GEORGIAN.**			☍ $1^{d}. 20\frac{1}{4}^{h}$.	
1	9. 9. 34	0. 21 S	9. 9. 37	0. 22 S	23. 29 S	18. 42	12. 2
11	9. 9. 41	0. 21	9. 9. 13	0. 22	23. 31	18. 40	11. 19
21	9. 9. 48	0. 21	9. 8. 49	0. 22	23. 32	18. 39	10. 37

Days of the Week.	Days of the Month.	The MOON's Longitude. Noon. S. D. M. S.	Longitude. Midnight. S. D. M. S.	Latitude. Noon. D. M. S.	Latitude. Midnight. D. M. S.
Tu.	1	0. 8. 0. 37	0. 14. 33. 38	4. 57. 30 N	5. 7. 46 N
W.	2	0. 21. 12. 51	0. 27. 58. 36	5. 14. 7	5. 16. 15
Th.	3	1. 4. 51. 3	1. 11. 50. 15	5. 13. 55	5. 6. 56
F.	4	1. 18. 56. 7	1. 26. 8. 24	4. 55. 12	4. 38. 38
Sa.	5	2. 3. 26. 40	2. 20. 50. 18	4. 17. 19	3. 51. 32
Sun.	6	2. 18. 18. 31	2. 25. 50. 23	3. 21. 32	2. 47. 46
M.	7	3. 3. 24. 48	3. 11. 0. 39	2. 10. 50	1. 31. 27
Tu.	8	3. 18. 36. 42	3. 26. 11. 42	0. 50. 25 N	0. 8. 34 N
W.	9	4. 3. 44. 31	4. 11. 14. 4	0. 33. 16 S	1. 14. 14 S
Th.	10	4. 18. 39. 23	4. 25. 59. 40	1. 53. 32	2. 30. 31
F.	11	5. 3. 14. 17	5. 10. 22. 47	3. 4. 35	3. 35. 17
Sa.	12	5. 17. 24. 51	5. 24. 20. 22	4. 2. 15	4. 25. 12
Sun.	13	6. 1. 9. 19	6. 7. 51. 52	4. 44. 1	4. 58. 38
M.	14	6. 14. 28. 13	6. 20. 58. 41	5. 9. 2	5. 15. 17
Tu.	15	6. 27. 23. 40	7. 3. 43. 34	5. 17. 30	5. 15. 48
W.	16	7. 9. 58. 52	7. 16. 10. 1	5. 10. 22	5. 1. 22
Th.	17	7. 22. 17. 30	7. 28. 21. 48	4. 49. 0	4. 33. 30
F.	18	8. 4. 23. 24	8. 10. 22. 42	4. 15. 5	3. 53. 59
Sa.	19	8. 16. 20. 10	8. 22. 16. 13	3. 30. 26	3. 4. 42
Sun.	20	8. 28. 11. 14	9. 4. 5. 34	2. 37. 4	2. 7. 47
M.	21	9. 9. 59. 34	9. 15. 53. 33	1. 37. 9	1. 5. 29
Tu.	22	9. 21. 47. 50	9. 27. 42. 43	0. 33. 5 S	0. 0. 17 S
W.	23	10. 3. 38. 28	10. 9. 35. 22	0. 32. 36 N	1. 5. 15 N
Th.	24	10. 15. 33. 41	10. 21. 33. 41	1. 37. 18	2. 8. 25
F.	25	10. 27. 35. 39	11. 3. 39. 52	2. 38. 16	3. 6. 30
Sa.	26	11. 9. 46. 37	11. 15. 56. 12	3. 32. 47	3. 56. 49
Sun.	27	11. 22. 8. 55	11. 28. 25. 7	4. 18. 16	4. 36. 50
M.	28	0. 4. 45. 6	0. 11. 9. 11	4. 52. 13	5. 4. 9
Tu.	29	0. 17. 37. 42	0. 24. 10. 58	5. 12. 22	5. 16. 39
W.	30	1. 0. 49. 14	1. 7. 32. 44	5. 16. 47	5. 12. 37
Th.	31	1. 14. 21. 40	1. 21. 16. 9	5. 4. 2	4. 50. 57

Days of the Month.	Age.	Pass. Merid.	THE MOON's Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	24	18. 17	5. 22. 53	11. 23. 1	7. 44. 0 N	10. 28. 11 N
2	25	19. 7	17. 35. 5	24. 1. 16	13. 7. 52	15. 40. 48
3	26	20. 1	30. 43. 26	37. 43. 7	18. 4. 24	20. 15. 46
4	27	21. 0	45. 1. 9	52. 37. 29	22. 11. 45	23. 49. 5
5	28	22. 4	60. 30. 55	68. 38. 53	25. 4. 22	25. 54. 46
6	29	23. 10	76. 57. 33	85. 22. 5	26. 17. 42	26. 11. 36
7	1	6	93. 47. 1	102. 6. 54	25. 35. 59	24. 31. 34
8	2	0. 14	110. 17. 4	118. 13. 59	23. 0. 8	21. 4. 25
9	3	1. 15	125. 55. 28	133. 20. 32	18. 47. 48	16. 14. 2
10	4	2. 11	140. 29. 23	147. 23. 4	13. 26. 59	10. 30. 19
11	5	3. 3	154. 3. 14	160. 31. 51	7. 27. 29	4. 21. 38 N
12	6	3. 51	166. 51. 5	173. 3. 10	1. 15. 30 N	1. 48. 26 S
13	7	4. 38	179. 10. 14	185. 14. 22	4. 48. 5 S	7. 41. 34
14	8	5. 24	191. 17. 28	197. 21. 15	10. 27. 14	13. 3. 34
15	9	6. 10	203. 27. 11	209. 36. 30	15. 29. 14	17. 42. 58
16	10	6. 57	215. 50. 7	222. 8. 34	19. 43. 30	21. 29. 46
17	11	7. 46	228. 32. 2	235. 0. 17	23. 0. 43	24. 15. 26
18	12	8. 36	241. 32. 42	248. 8. 12	25. 13. 6	25. 53. 8
19	13	9. 27	254. 45. 29	261. 22. 59	26. 15. 2	26. 18. 40
20	14	10. 17	267. 59. 2	274. 32. 0	26. 4. 10	25. 31. 46
21	15	11. 6	281. 0. 23	287. 23. 2	24. 42. 8	23. 36. 4
22	16	11. 53	293. 39. 1	299. 47. 52	22. 14. 31	20. 38. 42
23	17	12. 38	305. 49. 25	311. 43. 55	18. 49. 52	16. 49. 15
24	18	13. 22	317. 31. 56	323. 14. 18	14. 38. 17	12. 18. 16
25	19	14. 4	328. 52. 5	334. 26. 34	9. 50. 34	7. 16. 32
26	20	14. 45	339. 59. 13	345. 31. 38	4. 37. 31 S	1. 54. 47 S
27	21	15. 27	351. 5. 29	356. 42. 39	0. 50. 14 N	3. 36. 9 N
28	22	16. 11	2. 25. 0	8. 14. 31	6. 21. 28	9. 4. 38
29	23	16. 58	14. 13. 14	20. 23. 7	11. 43. 53	14. 17. 16
30	24	17. 49	26. 46. 3	33. 23. 40	16. 42. 40	18. 57. 44
31	25	18. 45	40. 17. 15	47. 27. 32	20. 59. 50	22. 46. 15

Days of the Week.	Days of the Month.	The Moon's Semidiameter. Noon. M. S.	Semidiameter. Midnight. M. S.	Hor. Parallax. Noon. M. S.	Hor. Parallax. Midnight. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
Tu.	1	15. 27	15. 34	56. 43	57. 8	5016	4984
W.	2	15. 41	15. 49	57. 34	58. 2	4951	4916
Th.	3	15. 57	16. 4	58. 30	58. 58	4881	4847
F.	4	16. 11	16. 18	59. 25	59. 51	4814	4782
Sa.	5	16. 25	16. 31	60. 15	60. 36	4753	4728
Sun.	6	16. 36	16. 39	60. 54	61. 8	4707	4690
M.	7	16. 42	16. 43	61. 17	61. 21	4679	4675
Tu.	8	16. 43	16. 41	61. 20	61. 14	4676	4683
W.	9	16. 38	16. 34	61. 4	60. 49	4695	4712
Th.	10	16. 29	16. 23	60. 31	60. 9	4734	4760
F.	11	16. 16	16. 9	59. 44	59. 17	4791	4823
Sa.	12	16. 2	15. 54	58. 49	58. 21	4858	4892
Sun.	13	15. 46	15. 39	57. 52	57. 24	4928	4964
M.	14	15. 32	15. 25	56. 58	56. 33	4997	5028
Tu.	15	15. 18	15. 12	56. 9	55. 47	5059	5088
W.	16	15. 7	15. 2	55. 27	55. 10	5114	5136
Th.	17	14. 58	14. 54	54. 54	54. 40	5157	5175
F.	18	14. 51	14. 48	54. 28	54. 18	5191	5205
Sa.	19	14. 46	14. 44	54. 11	54. 5	5214	5222
Sun.	20	14. 43	14. 42	54. 0	53. 57	5229	5233
M.	21	14. 42	14. 42	53. 56	53. 56	5234	5234
Tu.	22	14. 42	14. 43	53. 58	54. 1	5231	5227
W.	23	14. 44	14. 46	54. 6	54. 12	5221	5213
Th.	24	14. 48	14. 50	54. 19	54. 27	5203	5193
F.	25	14. 53	14. 56	54. 37	54. 48	5179	5165
Sa.	26	15. 0	15. 3	55. 1	55. 14	5148	5131
Sun.	27	15. 7	15. 12	55. 29	55. 45	5111	5090
M.	28	15. 17	15. 22	56. 3	56. 22	5067	5043
Tu.	29	15. 27	15. 33	56. 42	57. 3	5017	4990
W.	30	15. 39	15. 46	57. 26	57. 50	4961	4931
Th.	31	15. 52	15. 59	58. 14	58. 38	4901	4871

DISTANCES of the Moon's *Centre* from the Sun, and from Stars *EAST* of her.

Stars' Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	90. 45. 34	89. 15. 22	87. 44. 49	86. 13. 54	84. 42. 36	83. 10. 56	81. 38. 53	80. 6. 27
	2	78. 33. 37	77. 0. 23	75. 26. 44	73. 52. 41	72. 18. 14	70. 43. 21	69. 8. 3	67. 32. 19
	3	65. 56. 10	64. 19. 35	62. 42. 34	61. 5. 8	59. 27. 16	57. 48. 58	56. 10. 14	54. 31. 5
	4	52. 51. 31	51. 11. 31	49. 31. 8	47. 50. 19	46. 9. 7	44. 27. 31	42. 45. 31	41. 3. 8
	5	39. 20. 22	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	10	62. 41. 8	60. 50. 26	59. 0. 6	57. 10. 9	55. 20. 34	53. 31. 22	51. 42. 35	49. 54. 13
	11	48. 6. 15	46. 18. 43	44. 31. 37	42. 44. 58	40. 58. 46	39. 13. 1	37. 27. 44	35. 42. 55
	12	33. 58. 35	32. 14. 43	30. 31. 21	28. 48. 30	27. 6. 9	25. 24. 20	23. 43. 3	22. 2. 19
	13	20. 22. 8	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Antares.	13	65. 54. 24	64. 13. 27	62. 32. 54	60. 52. 46	59. 13. 3	57. 33. 44	55. 54. 49	54. 16. 17
	14	52. 38. 8	51. 0. 22	49. 22. 58	47. 45. 55	46. 9. 15	44. 32. 55	42. 56. 55	41. 21. 15
	15	39. 45. 55	38. 10. 54	36. 36. 11	35. 1. 46	33. 27. 39.	31. 53. 49	30. 20. 15	28. 46. 57
	16	27. 13. 55	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	16	83. 17. 22	81. 56. 26	80. 35. 48	79. 15. 29	77. 55. 27	76. 35. 44	75. 16. 22	73. 57. 19
	17	72. 38. 37	71. 20. 15	70. 2. 16	68. 44. 40	67. 27. 27	66. 10. 38	64. 54. 14	63. 38. 16
	18	62. 22. 44	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Fomalhaut.	18	85. 40. 18	84. 18. 12	82. 56. 15	81. 34. 27	80. 12. 47	78. 51. 16	77. 29. 56	76. 8. 45
	19	74. 47. 44	73. 26. 53	72. 6. 14	70. 45. 46	69. 25. 30	68. 5. 25	66. 45. 34	65. 25. 57
	20	64. 6. 33	62. 47. 23	61. 28. 31	60. 9. 56	58. 51. 38	57. 33. 37	56. 15. 59	54. 58. 43
	21	53. 41. 50	52. 25. 23	51. 9. 22	49. 53. 51	48. 38. 49	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
α Pegasi.	21	- - -	- - -	- - -	- - -	67. 2. 35	65. 37. 24	64. 12. 16	62. 47. 12
	22	61. 22. 11	59. 57. 14	58. 32. 23	57. 7. 37	55. 42. 57	54. 18. 22	52. 53. 56	51. 29. 37
	23	50. 5. 27	48. 41. 25	47. 17. 35	45. 53. 58	44. 30. 34	43. 7. 26	41. 44. 36	40. 22. 4
	24	38. 59. 53	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	24	79. 30. 56	78. 1. 7	76. 31. 12	75. 1. 11	73. 31. 5	72. 0. 52	70. 30. 33	69. 0. 7
	25	67. 29. 35	65. 58. 56	64. 28. 9	62. 57. 16	61. 26. 15	59. 55. 7	58. 23. 50	56. 52. 26
	26	55. 20. 54	53. 49. 13	52. 17. 24	50. 45. 26	49. 13. 20	47. 41. 5	46. 8. 40	44. 36. 6
	27	43. 3. 24	41. 30. 31	39. 57. 30	38. 24. 19	36. 50. 59	35. 17. 30	33. 43. 53	32. 10. 7
	28	30. 36. 12	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Aldebaran.	28	63. 20. 11	61. 46. 32	60. 12. 41	58. 38. 39	57. 4. 25	55. 30. 0	53. 55. 23	52. 20. 36
	29	50. 45. 38	49. 10. 28	47. 35. 8	45. 59. 39	44. 24. 1	42. 48. 12	41. 12. 19	39. 36. 20
	30	38. 0. 16	36. 24. 11	34. 48. 4	33. 11. 58	31. 35. 54	- - -	- - -	- - -
The Sun.	28	119. 40. 13	118. 12. 2	116. 43. 35	115. 14. 54	113. 45. 58	112. 16. 46	110. 47. 17	109. 17. 32
	29	107. 47. 31	106. 17. 12	104. 46. 35	103. 15. 40	101. 44. 28	100. 12. 57	98. 41. 7	97. 8. 59
	30	95. 36. 31	94. 3. 43	92. 30. 35	90. 57. 7	89. 23. 19	87. 49. 9	86. 14. 39	84. 39. 47
	31	83. 4. 34	81. 28. 59	79. 53. 3	78. 16. 45	76. 40. 6	75. 3. 5	73. 25. 40	71. 47. 54
	A.1	70. 9. 46	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	Noon.	IIIh.	VI h.	IX h.	Midnight.	XV h.	XVIII h.	XXI h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	1	44. 22. 42	45. 42. 29	47. 3. 23	48. 25. 23	49. 48. 25	51. 12. 28	52. 37. 26	54. 3. 20
	2	55. 30. 9	56. 57. 46	58. 26. 10	59. 55. 20	61. 25. 18	62. 55. 58	64. 27. 18	65. 59. 20
	3	67. 32. 2	69. 5. 21	70. 39. 17	72. 13. 47	73. 48. 54	75. 24. 33	77. 0. 45	78. 37. 27
	4	80. 14. 40	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Pegasi.	4	58. 8. 26	59. 50. 29	61. 33. 6	63. 16. 16	64. 59. 59	66. 44. 13	68. 28. 55	70. 14. 6
	5	71. 59. 46	73. 45. 51	75. 32. 21	77. 19. 15	79. 6. 32	- - -	- - -	- - -
The Sun.	10	- - -	- - -	- - -	- - -	- - -	39. 56. 4	41. 37. 58	43. 19. 27
	11	45. 0. 33	46. 41. 14	48. 21. 30	50. 1. 22	51. 40. 48	53. 19. 48	54. 58. 22	56. 36. 30
	12	58. 14. 13	59. 51. 29	61. 28. 18	63. 4. 42	64. 40. 40	66. 16. 11	67. 51. 16	69. 25. 56
	13	71. 0. 11	72. 34. 0	74. 7. 25	75. 40. 25	77. 13. 1	78. 45. 12	80. 17. 0	81. 48. 24
	14	83. 19. 25	84. 50. 3	86. 20. 20	87. 50. 15	89. 19. 48	90. 49. 0	92. 17. 53	93. 46. 25
	15	95. 14. 38	96. 42. 31	98. 10. 7	99. 37. 25	101. 4. 25	102. 31. 8	103. 57. 35	105. 23. 46
	16	106. 49. 41	108. 15. 21	109. 40. 47	111. 6. 0	112. 30. 58	113. 55. 43	115. 20. 17	116. 44. 38
	17	118. 8. 48	119. 32. 48	120. 56. 38	- - -	- - -	- - -	- - -	- - -
Regulus.	14	- - -	- - -	- - -	- - -	53. 50. 2	55. 26. 10	57. 1. 58	58. 37. 27
	15	60. 12. 36	61. 47. 27	63. 22. 0	64. 56. 15	66. 30. 13	68. 3. 54	69. 37. 19	71. 10. 29
	16	72. 43. 23	74. 16. 2	75. 48. 27	77. 20. 38	78. 52. 36	80. 24. 21	81. 55. 54	83. 27. 14
	17	84. 58. 24	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	IIIʰ. D. M. S.	VIʰ. D. M. S.	IXʰ. D. M. S.	*Midnight.* D. M. S.	XVʰ. D. M. S.	XVIIIʰ. D. M. S.	XXIʰ. D. M. S.
Spica ♍.	17	30. 58. 27	32. 29. 2	33. 59. 30	35. 29. 49	37. 0. 1	38. 30. 5	40. 0. 3	41. 29. 53
	18	42. 59. 37	44. 29. 14	45. 58. 46	47. 28. 12	48. 57. 32	50. 26. 47	51. 55. 58	53. 25. 5
	19	54. 54. 7	56. 23. 5	57. 52. 1	59. 20. 53	60. 49. 43	62. 18. 30	63. 47. 15	65. 15. 58
	20	66. 44. 40	68. 13. 20	69. 41. 59	71. 10. 38	72. 39. 16	74. 7. 54	75. 36. 31	77. 5. 9
	21	78. 33. 48	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Antares.	21	32. 45. 55	34. 14. 42	35. 43. 30	37. 12. 20	38. 41. 11	40. 10. 3	41. 38. 58	43. 7. 54
	22	44. 36. 53	46. 5. 54	47. 34. 58	49. 4. 5	50. 33. 15	52. 2. 28	53. 31. 45	55. 1. 6
	23	56. 30. 30	57. 59. 58	59. 29. 31	60. 59. 8	62. 28. 50	63. 58. 36	65. 28. 28	66. 58. 25
	24	68. 28. 28	69. 58. 36	71. 28. 50	72. 59. 10	74. 29. 36	76. 0. 8	77. 30. 48	79. 1. 34
	25	80. 32. 28	82. 3. 29	83. 34. 37	85. 5. 54	86. 37. 18	88. 8. 51	89. 40. 32	91. 12. 23
	26	92. 44. 22	94. 16. 31	95. 48. 49	97. 21. 18	98. 53. 56	100. 26. 45	101. 59. 44	103. 32. 55
	27	105. 6. 17	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	27	55. 49. 4	57. 5. 9	58. 21. 56	59. 39. 23	60. 57. 30	62. 16. 15	63. 35. 34	64. 55. 30
	28	66. 15. 58	67. 36. 58	68. 58. 27	70. 20. 26	71. 42. 55	73. 5. 51	74. 29. 14	75. 53. 2
	29	77. 17. 15	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Fomalhaut.	29	52. 25. 18	53. 49. 16	55. 14. 0	56. 39. 27	58. 5. 35	59. 32. 25	60. 59. 53	62. 27. 58
	30	63. 56. 42	65. 25. 59	66. 55. 50	68. 26. 13	69. 57. 10	71. 28. 37	73. 0. 34	74. 33. 0
	31	76. 5. 55	77. 39. 17	79. 13. 5	80. 47. 20	82. 22. 0	83. 57. 5	85. 32. 33	87. 8. 24
	A. 1	88. 44. 38	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, at III o'Clock in the *Morning*.

13	·3	O	·1 2· 4·
14	2· 1·	O	4· .3O
15	.2O	O	1 ☌ 4 ·3
16	·1 4·	O	2· 3·
17	4· 2·	O	1· 3·
18	4· ·2 3·:1	O	
19	4· 3·	O	1· ·2
20	·4 ·3	O	2· .1O
21	·4 2· 1·:3	O	
22	·4 ·2	O	·1 ·3
23	·4 1·	O	·2 3·
24	.4O 2·	O	1· 3·
25	·2 ·1 3·	O	·4
26	3·	O	1· ·2 ·4
27	.1O ·3	O	2· ·4
28	2· ·3 1·	O	·4
29	·2	O	·1 ·3 4·
30	1·	O	·2 ·3 4·
31		O	·1 3· 4· 2.●

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
F.	1	*K. Geo. IV. crowned.*
Sa.	2	[Lammas Day.
Sun.	3	10*th Sunday aft. Trinity.*
M.	4	
Tu.	5	
W.	6	Transfig. of our Lord.
Th.	7	Name of Jesus.
F.	8	
Sa.	9	
Sun.	10	11*th Sunday aft. Trinity.*
M.	11	[St. Lawrence.
Tu.	12	*King Geo. IV. born* 1762.
W.	13	
Th.	14	
F.	15	Assumption.
Sa.	16	*Duke of York born.*
Sun.	17	12*th Sunday aft. Trinity.*
M.	18	
Tu.	19	
W.	20	
Th.	21	*Duke of Clarence born.*
F.	22	
Sa.	23	
Sun.	24	13*th Sunday aft. Trinity.*
M.	25	*[St. Bartholomew.*
Tu.	26	
W.	27	
Th.	28	St. Augustine.
F.	29	St. John Bapt. beheaded.
Sa.	30	
Sun.	31	14*th Sunday aft. Trinity.*

Phases of the MOON.

	D.	H.	M.
● New Moon	6.	1.	53
☽ *First Quarter* . .	13.	2.	20
○ Full Moon	21.	6.	41
☾ *Last Quarter* . . .	28.	18.	17

Other *Phenomena.*

D.	H.	M.	
3.	18.	48	☽ ♂.
6.	-	-	⊙ ecl. invis.
14.	12.	24	☽ α ♏.
15.	-	-	☿ α ♌, ☿ $74\frac{1}{3}$'N. of ∗.
17.	2.	23	☽ ♅.
23.	12.	24	⊙ enters ♍.

Days of the Week.	Days of the Month.	The SUN's Longitude.	Rt. Ascen. in Time.	Declin. North.	Diff.	Equation of Time. *Add to app. Time.*	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S	M. S.	S.
F.	1	4. 8. 22. 2	8. 43. 10, 8	18. 11. 29	15. 6	6. 0, 3	3, 3
Sa.	2	4. 9. 19. 29	8. 47. 4, 0	17. 56. 23	15. 23	5. 57, 0	3, 9
Sun.	3	4. 10. 16. 57	8. 50. 56, 7	17. 41. 0	15. 41	5. 53, 1	4, 5
M.	4	4. 11. 14. 27	8. 54. 48, 8	17. 25. 19	15. 57	5. 48, 6	5, 0
Tu.	5	4. 12. 11. 58	8. 58. 40, 2	17. 9. 22	16. 15	5. 43, 6	5, 7
W.	6	4. 13. 9. 30	9. 2. 31, 1	16. 53. 7	16. 31	5. 37, 9	6, 2
Th.	7	4. 14. 7. 3	9. 6. 21, 4	16. 36. 36	16. 47	5. 31, 7	6, 9
F.	8	4. 15. 4. 37	9. 10. 11, 1	16. 19. 49	17. 2	5. 24, 8	7, 4
Sa.	9	4. 16. 2. 12	9. 14. 0, 2	16. 2. 47	17. 19	5. 17, 4	8, 0
Sun.	10	4. 16. 59. 48	9. 17. 48, 7	15. 45. 28	17. 33	5. 9, 4	8, 7
M.	11	4. 17. 57. 25	9. 21. 36, 6	15. 27. 55	17. 48	5. 0, 7	9, 2
Tu.	12	4. 18. 55. 2	9. 25. 23, 9	15. 10. 7	18. 2	4. 51, 5	9, 8
W.	13	4. 19. 52. 41	9. 29. 10, 6	14. 52. 5	18. 17	4. 41, 7	10, 4
Th.	14	4. 20. 50. 20	9. 32. 56, 8	14. 33. 48	18. 31	4. 31, 3	10, 9
F.	15	4. 21. 48. 1	9. 36. 42, 4	14. 15. 17	18. 44	4. 20, 4	11, 5
Sa.	16	4. 22. 45. 42	9. 40. 27, 4	13. 56. 33	18. 57	4. 8, 9	12, 0
Sun.	17	4. 23. 43. 25	9. 44. 11, 9	13. 37. 36	19. 10	3. 56, 9	12, 6
M.	18	4. 24. 41. 8	9. 47. 55, 8	13. 18. 26	19. 23	3. 44, 3	13, 1
Tu.	19	4. 25. 38. 53	9. 51. 39, 3	12. 59. 3	19. 35	3. 31, 2	13, 6
W.	20	4. 26. 36. 39	9. 55. 22, 2	12. 39. 28	19. 47	3. 17, 6	14, 0
Th.	21	4. 27. 34. 26	9. 59. 4, 7	12. 19. 41	19. 59	3. 3, 6	14, 6
F.	22	4. 28. 32. 15	10. 2. 46, 7	11. 59. 42	20. 11	2. 49, 0	14, 9
Sa.	23	4. 29. 30. 5	10. 6. 28, 2	11. 39. 31	20. 21	2. 34, 1	15, 5
Sun.	24	5. 0. 27. 57	10. 10. 9, 3	11. 19. 10	20. 32	2. 18, 6	15, 8
M.	25	5. 1. 25. 50	10. 13. 49, 9	10. 58. 38	20. 43	2. 2, 8	16, 3
Tu.	26	5. 2. 23. 46	10. 17. 30, 2	10. 37. 55	20. 53	1. 46, 5	16, 6
W.	27	5. 3. 21. 43	10. 21. 10, 1	10. 17. 2	21. 3	1. 29, 9	17, 0
Th.	28	5. 4. 19. 42	10. 24. 49, 6	9. 55. 59	21. 13	1. 12, 9	17, 3
F.	29	5. 5. 17. 43	10. 28. 28, 8	9. 34. 46	21. 22	0. 55, 6	17, 7
Sa.	30	5. 6. 15. 46	10. 32. 7, 6	9. 13. 24	21. 31	0. 37, 9	18, 0
Sun.	31	5. 7. 13. 51	10. 35. 46, 1	8. 51. 53		0. 19, 9	

Days	Time of ☉'s Semidiam. passing Merid.	The Sun's Semi-diameter.	The Sun's Hourly Motion.	The Sun's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 6, 5	15. 47, 5	2. 23, 6	0. 006328	9. 27. 4
7	1. 6, 0	15. 48, 3	2. 23, 8	0. 005953	9. 26. 44
13	1. 5, 5	15. 49, 3	2. 24, 1	0. 005493	9. 26. 25
19	1. 5, 0	15. 50, 4	2. 24, 5	0. 004974	9. 26. 6
25	1. 4, 6	15. 51, 6	2. 24, 8	0. 004421	9. 25. 47

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite. Immersions. Days.	I. Satellite. Immersions. H. M. S.	II. Satellite. Immersions. Days.	II. Satellite. Immersions. H. M. S.	III. Satellite. Days.	III. Satellite. H. M. S.
1	18. 54. 9	3	2. 7. 50	7	13. 47. 2 Im.
3	13. 22. 40	*6	15. 25. 38	7	16. 33. 18 E.
5	7. 51. 8	10	4. 43. 6	14	17. 46. 22 Im.
7	2. 19. 40	13	18. 0. 59	14	20. 33. 37 E.
8	20. 48. 7	17	7. 18. 27	21	21. 45. 25 Im.
*10	15. 16. 38	20	20. 36. 26	22	0. 33. 33 E.
12	9. 45. 4	24	9. 53. 55	29	1. 44. 58 Im.
14	4. 13. 34	27	23. 11. 57	29	4. 34. 9 E.
15	22. 42. 0	31	12. 29. 27		
17	17. 10. 29				
19	11. 38. 55				
21	6. 7. 23				
23	0. 35. 47				
24	19. 4. 14				
*26	13. 32. 38			IV. Satellite.	
28	8. 1. 5				
30	2. 29. 28				
31	20. 57. 54				

THE PLANETS'

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Rt. Asc. *in Time.*	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
☿			*MERCURY.*			Sup. ☌ 11^{d}. 12^{h}.	
1	2. 16. 19	3. 31 N	3. 26. 59	0. 53 N	21. 39 N	7. 57	23. 18
4	3. 5. 10	5. 17	4. 3. 2	1. 17	20. 45	8. 23	23. 32
7	3. 23. 23	6. 27	4. 9. 13	1. 34	19. 29	8. 48	23. 47
10	4. 10. 29	6. 58	4. 15. 24	1. 43	17. 53	9. 14	0. 0
13	4. 26. 10	6. 54	4. 21. 29	1. 46	16. 2	9. 38	0. 9
16	5. 10. 27	6. 23	4. 27. 24	1. 42	13. 59	10. 1	0. 20
19	5. 23. 23	5. 35	5. 3. 8	1. 34	11. 50	10. 23	0. 31
22	6. 5. 11	4. 37	5. 8. 40	1. 22	9. 35	10. 43	0. 41
25	6. 16. 2	3. 32	5. 13. 59	1. 6	7. 19	11. 3	0. 49
28	6. 26. 6	2. 25	5. 19. 7	0. 47	5. 2	11. 21	0. 57
31	7. 5. 33	1. 18	5. 24. 4	0. 27	2. 46	11. 39	1. 3
♀			*VENUS.*			Gr. Elong. 1^{d}.	
1	8. 25. 11	0. 36 S	5. 24. 8	0. 37 S	1. 46 N	11. 37	2. 54
7	9. 4. 40	1. 8	5. 29. 45	1. 17	1. 5 S	11. 57	2. 51
13	9. 14. 10	1. 39	6. 5. 5	2. 0	3. 51	12. 16	2. 46
19	9. 23. 39	2. 7	6. 10. 1	2. 47	6. 32	12. 33	2. 41
25	10. 3. 7	2. 31	6. 14. 29	3. 38	9. 5	12. 48	2. 34
♂			*MARS.*				
1	2. 16. 55	0. 53 N	3. 6. 56	0. 36 N	23. 52 N	6. 30	21. 46
7	2. 19. 57	0. 58	3. 10. 54	0. 39	23. 40	6. 48	21. 40
13	2. 22. 57	1. 3	3. 14. 50	0. 43	23. 21	7. 5	21. 35
19	2. 25. 55	1. 8	3. 18. 43	0. 47	22. 56	7. 22	21. 29
25	2. 28. 52	1. 12	3. 22. 35	0. 51	22. 25	7. 38	21. 24
♃			*JUPITER.*				
1	2. 23. 21	0. 21 S	3. 0. 22	0. 18 S	23. 10 N	6. 2	21. 16
7	2. 23. 52	0. 20	3. 1. 34	0. 18	23. 10	6. 7	20. 58
13	2. 24. 22	0. 19	3. 2. 43	0. 17	23. 9	6. 12	20. 40
19	2. 24. 53	0. 19	3. 3. 50	0. 17	23. 8	6. 17	20. 22
25	2. 25. 24	0. 18	3. 4. 53	0. 17	23. 6	6. 21	20. 5
♄			*SATURN.*			□ 16^{d}. 19$\frac{1}{4}$^{h}.	
1	1. 16. 36	2. 16 S	1. 22. 47	2. 14 S	16. 20 N	3. 24	18. 38
7	1. 16. 49	2. 16	1. 23. 7	2. 15	16. 24	3. 25	18. 16
13	1. 17. 2	2. 16	1. 23. 23	2. 16	16. 27	3. 26	17. 54
19	1. 17. 15	2. 16	1. 23. 37	2. 17	16. 29	3. 27	17. 33
25	1. 17. 28	2. 15	1. 23. 46	2. 18	16. 30	3. 28	17. 12
♅			*GEORGIAN.*				
1	9. 9. 55	0. 21 S	9. 8. 26	0. 22 S	23. 34 S	18. 37	9. 52
11	9. 10. 2	0. 21	9. 8. 8	0. 22	23. 35	18. 35	9. 12
21	9. 10. 9	0. 21	9. 7. 53	0. 22	23. 36	18. 34	8. 34

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon. S. D. M. S.	Longitude. Midnight. S. D. M. S.	Latitude. Noon. D. M. S.	Latitude. Midnight. D. M. S.
F.	1	1. 28. 16. 12	2. 5. 21. 43	4. 33. 24 N	4. 11. 28 N
Sa.	2	2. 12. 32. 32	2. 19. 48. 22	3. 45. 20	3. 15. 17
Sun.	3	2. 27. 8. 45	3. 4. 33. 1	2. 41. 43	2. 5. 9
M.	4	3. 12. 0. 28	3. 19. 30. 13	1. 26. 12	0. 45. 35 N
Tu.	5	3. 27. 1. 19	4. 4. 32. 43	0. 4. 3 N	0. 37. 34 S
W.	6	4. 12. 3. 18	4. 19. 32. 0	1. 18. 25 S	1. 57. 44
Th.	7	4. 26. 57. 45	5. 4. 19. 35	2. 34. 46	3. 8. 52
F.	8	5. 11. 36. 39	5. 18. 48. 14	3. 39. 29	4. 6. 12
Sa.	9	5. 25. 53. 46	6. 2. 52. 53	4. 28. 43	4. 46. 52
Sun.	10	6. 9. 45. 20	6. 16. 31. 3	5. 0. 34	5. 9. 50
M.	11	6. 23. 10. 8	6. 29. 42. 46	5. 14. 44	5. 15. 27
Tu.	12	7. 6. 9. 16	7. 12. 30. 5	5. 12. 9	5. 5. 3
W.	13	7. 18. 45. 39	7. 24. 56. 29	4. 54. 24	4. 40. 27
Th.	14	8. 1. 3. 9	8. 7. 6. 15	4. 23. 27	4. 3. 40
F.	15	8. 13. 6. 22	8. 19. 4. 4	3. 41. 23	3. 16. 50
Sa.	16	8. 24. 59. 57	9. 0. 54. 35	2. 50. 17	2. 22. 1
Sun.	17	9. 6. 48. 29	9. 12. 42. 10	1. 52. 17	1. 21. 24
M.	18	9. 18. 36. 7	9. 24. 30. 45	0. 49. 39 S	0. 17. 19 S
Tu.	19	10. 0. 26. 30	10. 6. 23. 43	0. 15. 16 N	0. 47. 48 N
W.	20	10. 12. 22. 43	10. 18. 23. 47	1. 19. 56	1. 51. 20
Th.	21	10. 24. 27. 10	11. 0. 33. 5	2. 21. 38	2. 50. 29
F.	22	11. 6. 41. 43	11. 12. 53. 11	3. 17. 33	3. 42. 30
Sa.	23	11. 19. 7. 37	11. 25. 25. 6	4. 4. 58	4. 24. 37
Sun.	24	0. 1. 45. 45	0. 8. 9. 39	4. 41. 11	4. 54. 23
M.	25	0. 14. 36. 52	0. 21. 7. 27	5. 3. 57	5. 9. 41
Tu.	26	0. 27. 41. 29	1. 4. 19. 4	5. 11. 26	5. 9. 4
W.	27	1. 11. 0. 16	1. 17. 45. 9	5. 2. 30	4. 51. 41
Th.	28	1. 24. 33. 46	2. 1. 26. 12	4. 36. 40	4. 17. 33
F.	29	2. 8. 22. 27	2. 15. 22. 29	3. 54. 30	3. 27. 45
Sa.	30	2. 22. 26. 15	2. 29. 33. 38	2. 57. 36	2. 24. 27
Sun.	31	3. 6. 44. 25	3. 13. 58. 18	1. 48. 46	1. 11. 7 N

Days of the Month.	Age.	Pass. Mer.	The Moon's Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	26	19. 45	54. 54. 24	62. 36. 38	24. 14. 4 N	25. 20. 26 N
2	27	20. 48	70. 32. 13	78. 37. 53	26. 2. 48	26. 19. 2
3	28	21. 52	86. 49. 27	95. 2. 17	26. 7. 41	25. 28. 14
4	29	22. 55	103. 11. 47	111. 13. 50	24. 21. 7	22. 47. 47
5	30	23. 53	119. 5. 14	126. 43. 50	20. 50. 30	18. 32. 15
6	1	6	134. 8. 35	141. 19. 26	15. 56. 27	13. 6. 43
7	2	0. 48	148. 17. 8	155. 3. 0	10. 6. 43	7. 0. 1
8	3	1. 39	161. 38. 43	168. 6. 9	3. 49. 55 N	0. 39. 27 N
9	4	2. 28	174. 27. 18	180. 44. 5	2. 28. 39 S	5. 31. 55 S
10	5	3. 16	186. 58. 21	193. 11. 49	8. 28. 15	11. 15. 46
11	6	4. 4	199. 25. 59	205. 42. 7	13. 52. 44	16. 17. 42
12	7	4. 52	212. 1. 11	218. 23. 55	18. 29. 20	20. 26. 27
13	8	5. 42	224. 50. 35	231. 21. 7	22. 8. 3	23. 33. 11
14	9	6. 32	237. 55. 7	244. 31. 47	24. 41. 7	25. 31. 17
15	10	7. 23	251. 10. 2	257. 48. 33	26. 3. 18	26. 16. 58
16	11	8. 14	264. 25. 53	271. 0. 35	26. 12. 20	25. 49. 40
17	12	9. 4	277. 31. 17	283. 56 50	25. 9. 28	24. 12. 26
18	13	9. 52	290. 16. 20	296. 29. 12	22. 59. 27	21. 31. 29
19	14	10. 38	302. 35. 14	308. 34. 33	19. 49. 42	17. 55. 19
20	15	11. 23	314. 27. 31	320. 14. 49	15. 49. 36	13. 33. 52
21	16	12. 6	325. 57. 22	331. 36. 16	11. 9. 28	8. 37. 47
22	17	12. 48	337. 12. 48	342. 48. 21	6. 0. 11	3. 18. 7 S
23	18	13. 31	348. 24. 26	354. 2. 40	0. 33. 2 S	2. 13. 31 N
24	19	14. 14	359. 44. 46	5. 32. 29	5. 0. 0 N	7. 44. 44
25	20	15. 0	11. 27. 33	17. 31. 42	10. 25. 55	13. 1. 43
26	21	15. 50	23. 46. 37	30. 13. 46	15. 30. 7	17. 48. 52
27	22	16. 43	36. 54. 21	43. 49. 8	19. 55. 43	21. 48. 13
28	23	17. 40	50. 58. 16	58. 21. 12	23. 23. 51	24. 40. 12
29	24	18. 41	65. 56. 33	73. 42. 2	25. 34. 57	26. 6. 7
30	25	19. 43	81. 34. 36	89. 30. 43	26. 12. 11	25. 52. 15
31	26	20. 45	97. 26. 36	105. 18. 38	25. 6. 10	23. 54. 33

Days of the Week.	Days of the Month.	The Moon's Semidiameter.		The Moon's Hor. Parallax.		Proportional Logarithm.	
		Noon.	*Midnight.*	*Noon.*	*Midnight.*		
		M. S.	M. S.	M. S.	M. S.	*Noon.*	*Midn.*
F.	1	16. 5	16. 11	59. 2	59. 25	4842	4814
Sa.	2	16. 18	16. 23	59. 47	60. 8	4787	4762
Sun.	3	16. 28	16. 32	60. 26	60. 41	4740	4722
M.	4	16. 35	16. 37	60. 52	60. 59	4709	4701
Tu.	5	16. 38	16. 38	61. 3	61. 2	4696	4697
W.	6	16. 36	16. 33	60. 55	60. 44	4705	4718
Th.	7	16. 29	16. 24	60. 30	60. 12	4735	4757
F.	8	16. 18	16. 11	59. 50	59. 25	4783	4814
Sa.	9	16. 4	15. 57	58. 59	58. 31	4845	4880
Sun.	10	15. 49	15. 41	58. 3	57. 35	4915	4950
M.	11	15. 34	15. 27	57. 7	56. 40	4985	5019
Tu.	12	15. 20	15. 13	56. 15	55. 52	5051	5081
W.	13	15. 7	15. 2	55. 31	55. 12	5108	5133
Th.	14	14. 58	14. 54	54. 55	54. 40	5156	5175
F.	15	14. 51	14. 48	54. 28	54. 19	5191	5203
Sa.	16	14. 46	14. 45	54. 12	54. 6	5213	5221
Sun.	17	14. 44	14. 44	54. 3	54. 2	5225	5226
M.	18	14. 44	14. 45	54. 3	54. 6	5225	5221
Tu.	19	14. 46	14. 48	54. 11	54. 17	5214	5206
W.	20	14. 50	14. 52	54. 24	54. 32	5197	5186
Th.	21	14. 54	14. 57	54. 42	54. 53	5173	5158
F.	22	15. 0	15. 4	55. 4	55. 17	5144	5127
Sa.	23	15. 7	15. 11	55. 30	55. 44	5110	5092
Sun.	24	15. 15	15. 19	55. 58	56. 13	5073	5054
M.	25	15. 23	15. 28	56. 29	56. 45	5034	5013
Tu.	26	15. 33	15. 37	57. 1	57. 18	4993	4971
W.	27	15. 41	15. 46	57. 35	57. 52	4950	4928
Th.	28	15. 51	15. 56	58. 10	58. 28	4906	4884
F.	29	16. 1	16. 6	58. 46	59. 2	4861	4842
Sa.	30	16. 10	16. 14	59. 18	59. 34	4822	4803
Sun.	31	16. 17	16. 21	59. 48	59. 59	4786	4772

DISTANCES of the Moon's *Centre* from the Sun, and from Stars *EAST* of her.

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	70. 9. 46	68. 31. 17	66. 52. 26	65. 13. 13	63. 33. 38	61. 53. 42	60. 13. 24	58. 32. 46
	2	36. 51. 47	55. 10. 27	53. 28. 47	51. 46. 48	50. 4. 30	48. 21. 52	46. 38. 57	44. 55. 45
	3	43. 12. 15	41. 28. 30	39. 44. 30	- - -	- - -	- - -	- - -	- - -
Antares.	9	71. 9. 15	69. 24. 4	67. 39. 19	65. 55. 0	64. 11. 8	62. 27. 42	60. 44. 41	59. 2. 7
	10	57. 19. 59	55. 38. 17	53. 57. 2	52. 16. 12	50. 35. 47	48. 55. 48	47. 16. 14	45. 37. 5
	11	43. 58. 20	42. 20. 0	40. 42. 4	39. 4. 32	37. 27. 23	35. 50. 37	34. 14. 13	32. 38. 12
	12	31. 2. 32	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	12	86. 36. 6	85. 12. 48	83. 49. 51	82. 27. 15	81. 5. 1	79. 43. 10	78. 21. 41	77. 0. 36
	13	75. 39. 54	74. 19. 36	72. 59. 43	71. 40. 16	70. 21. 14	69. 2. 38	67. 44. 31	66. 26. 51
	14	65. 9. 40	63. 52. 59	62. 36. 47	61. 21. 7	60. 5. 59	- - -	- - -	- - -
Fomalhaut.	14	- - -	- - -	- - -	- - -	83. 12. 41	81. 50. 23	80. 28. 17	79. 6. 23
	15	77. 44. 41	76. 23. 12	75. 1. 55	73. 40. 51	72. 20. 0.	70. 59. 22	69. 38. 57	68. 18. 47
	16	66. 58. 51	65. 39. 9	64. 19. 43	63. 0. 32	61. 41. 39	60. 23. 2	59. 4. 43	57. 46. 44
	17	56. 29. 6	55. 11. 49	53. 54. 56	52. 38. 26	51. 22. 21	- - -	- - -	- - -
α Pegasi.	17	- - -	- - -	- - -	- - -	70. 6. 40	68. 41. 26	67. 16. 15	65. 51. 6
	18	64. 25. 59	63. 0. 55	61. 35. 55	60. 10. 58	58. 46. 4	57. 21. 13	55. 56. 27	54. 31. 46
	19	53. 7. 11	51. 42. 41	50. 18. 18	48. 54. 4	47. 29. 59	46. 6. 5	44. 42. 23	43. 18. 53
	20	41. 55. 38	- - -	- - -	- - -	- - -	- - -	- - -	- - -

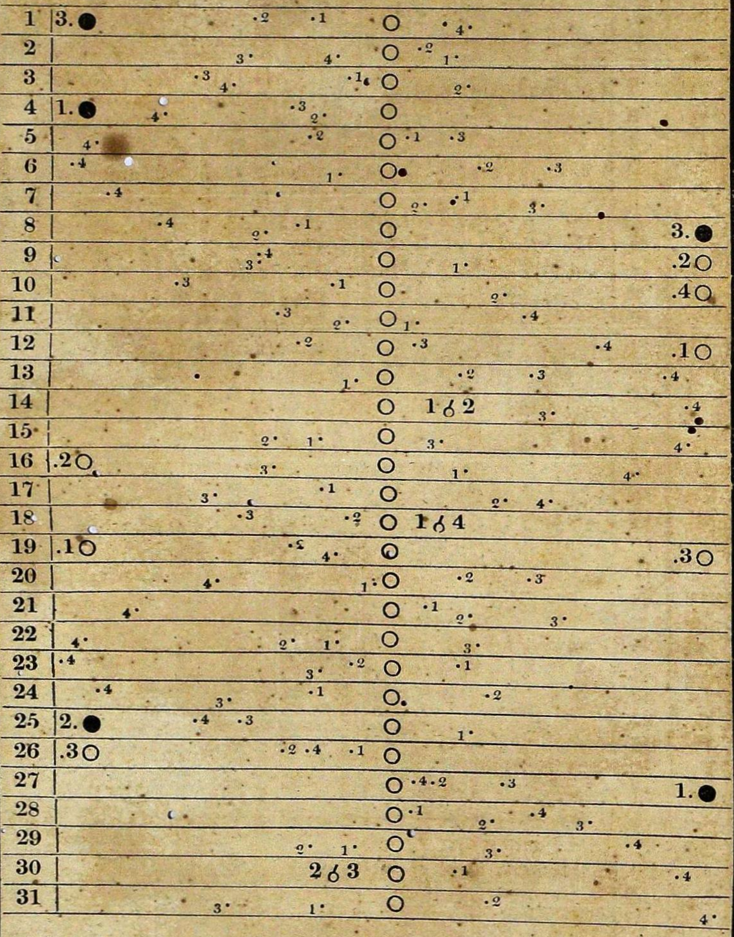
Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	20	82. 42. 12	81. 12. 8	79. 41. 57	78. 11. 39	76. 41. 13	75. 10. 39	73. 39. 58	72. 9. 9
	21	70. 38. 12	69. 7. 7	67. 35. 54	66. 4. 32	64. 33. 2	63. 1. 23	61. 29. 36	59. 57. 41
	22	58. 25. 37	56. 53. 24	55. 21. 3	53. 48. 34	52. 15. 56	50. 43. 9	49. 10. 14	47. 37. 11
	23	46. 4. 0	44. 30. 41	42. 57. 13	41. 23. 38	39. 49. 56	38. 16. 6	36. 42. 8	35. 8. 4
	24	33. 33. 54	31. 59. 39	30. 25. 19	28. 50. 56	27. 16. 28	- - -	- - -	- - -
Aldebaran.	24	- - -	- - -	- - -	- - -	59. 59. 23	58. 24. 59	56. 50. 28	55. 15. 48
	25	53. 41. 1	52. 6. 7	50. 31. 8	48. 56. 2	47. 20. 52	45. 45. 36	44. 10. 16	42. 34. 54
	26	40. 59. 31	39. 24. 4	37. 48. 40	36. 13. 19	34. 38. 4	33. 2. 57	31. 28. 1	29. 53. 18
	27	28. 18. 49	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	27	69. 22. 39	67. 42. 47	66. 2. 42	64. 22. 23	62. 41. 51	61. 1. 5	59. 20. 6	57. 38. 54
	28	55. 57. 28	54. 15. 48	52. 33. 55	50. 51. 49	49. 9. 31	47. 27. 0	45. 44. 18	44. 1. 23
	29	42. 18. 17	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	26	- - -	- - -	- - -	119. 58. 2	118. 26. 7	116. 53. 56	115. 21. 31	113. 48. 52
	27	112. 15. 59	110. 42. 51	109. 9. 28	107. 35. 51	106. 1. 59	104. 27. 52	102. 53. 30	101. 18. 53
	28	99. 44. 1	98. 8. 53	96. 33. 29	94. 57. 50	93. 21. 56	91. 45. 46	90. 9. 20	88. 32. 39
	29	86. 55. 42	85. 18. 29	83. 41. 1	82. 3. 18	80. 25. 19	78. 47. 4	77. 8. 34	75. 29. 50
	30	73. 50. 51	72. 11. 36	70. 32. 7	68. 52. 24	67. 12. 27	65. 32. 16	63. 51. 51	62. 11. 14
	31	60. 30. 24	58. 49. 22	57. 8. 9	55. 26. 44	53. 45. 9	52. 3. 24	50. 21. 29	48. 39. 25
	S. 1	46. 57. 13	- - -	- - -	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Pegasi.	1	67. 1. 48	68. 43. 11	70. 25. 0	72. 7. 16	73. 49. 58	75. 33. 5	77. 16. 35	79. 0. 30
	2	80. 44. 47	82. 29. 26	84. 14. 27	85. 59. 49	87. 45. 31	- - -	- - -	- - -
α Arietis.	2	- - -	- - -	- - -	- - -	44. 46. 17	46. 35. 23	48. 24. 49	50. 14. 35
	3	52. 4. 40	53. 55. 3	55. 45. 43	57. 36. 39	59. 27. 50	61. 19. 16	63. 10. 55	65. 2. 47
	4	66. 54. 50	68. 47. 3	70. 39. 26	72. 31. 57	74. 24. 36	- - -	- - -	- - -
The Sun.	9	40. 4. 7	41. 42. 3	43. 19. 33	44. 56. 38	46. 33. 16	48. 9. 28	49. 45. 15	51. 20. 36
	10	52. 55. 30	54. 29. 58	56. 4. 0	57. 37. 37	59. 10. 48	60. 43. 34	62. 15. 55	63. 47. 51
	11	65. 19. 22	66. 50. 29	68. 21. 12	69. 51. 31	71. 21. 27	72. 51. 0	74. 20. 10	75. 48. 58
	12	77. 17. 26	78. 45. 33	80. 13. 19	81. 40. 45	83. 7. 52	84. 34. 39	86. 1. 8	87. 27. 19
	13	88. 53. 13	90. 18. 50	91. 44. 10	93. 9. 14	94. 34. 4	95. 58. 39	97. 22. 59	98. 47. 6
	14	100. 11. 0	101. 34. 42	102. 58. 12	104. 21. 30	105. 44. 38	107. 7. 36	108. 30. 24	109. 53. 3
	15	111. 15. 34	112. 37. 57	114. 0. 12	115. 22. 20	116. 44. 22	118. 6. 18	119. 28. 8	120. 49. 54
Spica ♍.	13	27. 28. 31	29. 0. 44	30. 32. 43	32. 4. 30	33. 36. 4	35. 7. 26	36. 38. 36	38. 9. 35
	14	39. 40. 23	41. 10. 59	42. 41. 25	44. 11. 41	45. 41. 48	47. 11. 46	48. 41. 34	50. 11. 14
	15	51. 40. 47	53. 10. 13	54. 39. 31	56. 8. 43	57. 37. 50	59. 6. 52	60. 35. 48	62. 4. 40
	16	63. 33. 28	65. 2. 13	66. 30. 55	67. 59. 35	69. 28. 13	70. 56. 49	72. 25. 24	73. 53. 58
	17	75. 22. 31	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon.	III[h].	VI[h].	IX[h].	Midnight.	XV[h].	XVIII[h].	XXI[h].
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Antares.	17	29. 34. 28	31. 3. 9	32. 31. 51	34. 0. 34	35. 29. 18	36. 58. 4	38. 26. 52	39. 55. 42
	18	41. 24. 35	42. 53. 30	44. 22. 29	45. 51. 31	47. 20. 38	48. 49. 49	50. 19. 5	51. 48. 25
	19	53. 17. 51	54. 47. 22	56. 16. 59	57. 46. 41	59. 16. 30	60. 46. 25	62. 16. 27	63. 46. 36
	20	65. 16. 52	66. 47. 15	68. 17. 45	69. 48. 23	71. 19. 8	72. 50. 1	74. 21. 3	75. 52. 13
	21	77. 23. 31	78. 54. 58	80. 26. 33	81. 58. 17	83. 30. 10	85. 2. 12	86. 34. 24	88. 6. 45
	22	89. 39. 15	91. 11. 55	92. 44. 44	94. 17. 43	95. 50. 51	97. 24. 9	98. 57. 38	100. 31. 16
	23	102. 5. 4	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	23	53. 25. 22	54. 40. 38	55. 56. 40	57. 13. 26	58. 30. 53	59. 49. 0	61. 7. 45	62. 27. 6
	24	63. 47. 2	65. 7. 29	66. 28. 27	67. 49. 55	69. 11. 51	70. 34. 12	71. 56. 59	73. 20. 10
	25	74. 43. 44	76. 7. 39	77. 31. 55	78. 56. 31	80. 21. 25	81. 46. 37	83. 12. 7	84. 37. 52
	26	86. 3. 52	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Fomalhaut.	26	61. 7. 43	62. 35. 17	64. 3. 22	65. 31. 55	67. 0. 56	68. 30. 24	70. 0. 17	71. 30. 36
	27	73. 1. 18	74. 32. 23	76. 3. 49	77. 35. 36	79. 7. 44	80. 40. 11	82. 12. 57	83. 46. 1
	28	85. 19. 22	86. 53. 0	88. 26. 54	90. 1. 3	91. 35. 26	- - -	- - -	- - -
α Pegasi.	28	- - -	- - -	- - -	- - -	70. 5. 50	71. 45. 20	73. 25. 10	75. 5. 19
	29	76. 45. 47	78. 26. 34	80. 7. 39	81. 49. 1	83. 30. 40	85. 12. 36	86. 54. 48	88. 37. 15
	30	90. 19. 57	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	30	47. 24. 15	49. 10. 15	50. 56. 32	52. 43. 5	54. 29. 55	56. 17. 1	58. 4. 21	59. 51. 56
	31	61. 39. 46	63. 27. 49	65. 16. 5	67. 4. 34	68. 53. 15	70. 42. 7	72. 31. 11	74. 20. 25
	S. 1	76. 9. 49	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, at III o'Clock in the *Morning*.



Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
M.	1	Giles.
Tu.	2	London burnt 1666. O. S.
W.	3	
Th.	4	
F.	5	
Sa.	6	———— [Enurchus.
Sun.	7	15*th Sunday aft. Trinity.*
M.	8	Nativity of B. V. Mary.
Tu.	9	
W.	10	
Th.	11	
F.	12	
Sa.	13	
Sun.	14	16*th Sunday aft. Trinity.*
M.	15	[Holy Cross
Tu.	16	
W.	17	Lambert.
Th.	18	
F.	19	
Sa.	20	
Sun.	21	17*th Sunday aft. Trinity.*
M.	22	[*St. Matthew.*
Tu.	23	
W.	24	
Th.	25	
F.	26	St. Cyprian.
Sa.	27	
Sun.	28	18*th Sunday aft. Trinity.*
M.	29	*St. Michael. Q. of Wirt. b.*
Tu.	30	St. Jerome.

Phases of the MOON.

		D. H. M.
●	New Moon	4. 10. 19
☽	*First Quarter*	11. 18. 45
○	Full Moon	19. 21. 1
☾	*Last Quarter*	27. 0. 56

Other *Phenomena.*

D. H. M.	
1. 9. 57	☽ ♂.
7. - . -	♄ Stationary.
7. 7. 18	☽ ♀.
10. 20. 12	☽ α ♏.
16. - . -	♅ Stationary.
19. 8. 40	☿ α ♍, ☿ 3¼′ S. of ∗.
20. - -	♀ Stationary.
23. 9. 6	☉ enters ♎.
27. 10. 56	☽ ♃.

Days of the Week.	Days of the Month.	The Sun's Longitude.	The Sun's Rt. Ascen. in Time.	The Sun's Declin. North.	Diff.	Equation of Time. Add to app. Time.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M.S.	M. S.	S.
M.	1	5. 8. 11. 58	10. 39. 24, 4	8. 30. 14	21. 48	0. 1, 6	18, 5
						Sub.	
Tu.	2	5. 9. 10. 6	10. 43. 2, 3	8. 8. 26	21. 56	0. 16, 9	18, 9
W.	3	5. 10. 8. 17	10. 46. 39, 9	7. 46. 30	22. 4	0. 35, 8	19, 1
Th.	4	5. 11. 6. 30	10. 50. 17, 3	7. 24. 26	22. 10	0. 54, 9	19, 4
F.	5	5. 12. 4. 44	10. 53. 54, 4	7. 2. 16	22. 18	1. 14, 3	19, 6
Sa.	6	5. 13. 3. 0	10. 57. 31, 3	6. 39. 58	22. 24	1. 33, 9	19, 8
Sun.	7	5. 14. 1. 18	11. 1. 8, 0	6. 17. 34	22. 31	1. 53, 7	20, 1
M.	8	5. 14. 59. 38	11. 4. 44, 4	5. 55. 3	22. 36	2. 13, 8	20, 2
Tu.	9	5. 15. 57. 58	11. 8. 20, 7	5. 32. 27	22. 41	2. 34, 0	20, 5
W.	10	5. 16. 56. 21	11. 11. 56, 7	5. 9. 46	22. 47	2. 54, 5	20, 6
Th.	11	5. 17. 54. 45	11. 15. 32, 6	4. 46. 59	22. 52	3. 15, 1	20, 7
F.	12	5. 18. 53. 10	11. 19. 8, 4	4. 24. 7	22. 56	3. 35, 8	20, 8
Sa.	13	5. 19. 51. 38	11. 22. 44, 0	4. 1. 11	23. 1	3. 56, 6	21, 0
Sun.	14	5. 20. 50. 6	11. 26. 19, 6	3. 38. 10	23. 4	4. 17, 6	21, 1
M.	15	5. 21. 48. 36	11. 29. 55, 0	3. 15. 6	23. 8	4. 38, 7	21, 1
Tu.	16	5. 22. 47. 8	11. 33. 30, 4	2. 51. 58	23. 11	4. 59, 8	21, 1
W.	17	5. 23. 45. 42	11. 37. 5, 7	2. 28. 47	23. 14	5. 20, 9	21, 2
Th.	18	5. 24. 44. 18	11. 40. 41, 1	2. 5. 33	23. 16	5. 42, 1	21, 2
F.	19	5. 25. 42. 55	11. 44. 16, 4	1. 42. 17	23. 18	6. 3, 3	21, 1
Sa.	20	5. 26. 41. 34	11. 47. 51, 8	1. 18. 59	23. 21	6. 24, 4	21, 1
Sun.	21	5. 27. 40. 15	11. 51. 27, 2	0. 55. 38	23. 22	6. 45, 5	21, 0
M.	22	5. 28. 38. 58	11. 55. 2, 7	0. 32. 16	23. 24	7. 6, 5	20, 9
Tu.	23	5. 29. 37. 43	11. 58. 38, 3	0. 8. 52	23. 24	7. 27, 4	20, 8
				South.			
W.	24	6. 0. 36. 31	12. 2. 14, 0	0. 14. 32	23. 26	7. 48, 2	20, 6
Th.	25	6. 1. 35. 21	12. 5. 49, 9	0. 37. 58	23. 25	8. 8, 8	20, 5
F.	26	6. 2. 34. 13	12. 9. 25, 9	1. 1. 23	23. 26	8. 29, 3	20, 2
Sa.	27	6. 3. 33. 7	12. 13. 2, 1	1. 24. 49	23. 25	8. 49, 5	20, 0
Sun.	28	6. 4. 32. 4	12. 16. 38, 6	1. 48. 14	23. 25	9. 9, 5	19, 8
M.	29	6. 5. 31. 3	12. 20. 15, 3	2. 11. 39	23. 23	9. 29, 3	19, 6
Tu.	30	6. 6. 30. 5	12. 23. 52, 3	2. 35. 2		9. 48, 9	

Days	Time of ☉'s Semidiam. passing Merid.	THE SUN'S Semi-diameter.	Hourly Motion.	Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 4, 2	15. 53, 2	2. 25, 3	0. 003733	9. 25. 25
7	1. 3, 9	15. 54, 6	2. 25, 7	0. 003084	9. 25. 6
13	1. 3, 8	15. 56, 1	2. 26, 2	0. 002381	9. 24. 47
19	1. 3, 8	15. 57, 7	2. 26, 7	0. 001656	9. 24. 28
25	1. 3, 9	15. 59, 3	2. 27, 2	0. 000931	9. 24. 9

ECLIPSES OF THE SATELLITES OF JUPITER. MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.		
Immersions.		*Immersions.*				
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.	
*2	15. 26. 17	4	1. 47. 33	5	5. 43. 38	Im.
4	9. 54. 42	*7	15. 5. 6	5	8. 33. 42	E.
6	4. 23. 4	11	4. 23. 18	12	9. 42. 6	Im.
7	22. 51. 29	14	17. 40. 51	*12	12. 33. 8	E.
9	17. 19. 50	18	6. 59. 10	*19	13. 40. 17	Im.
11	11. 48. 16	21	20. 16. 42	*19	16. 32. 13	E.
13	6. 16. 37	25	9. 35. 7	26	17. 38. 30	Im.
15	0. 45. 1	28	22. 52. 41	26	20. 31. 22	E.
16	19. 13. 21					
*18	13. 41. 45					
20	8. 10. 4					
22	2. 38. 28					
23	21. 6. 47					
*25	15. 35. 10			IV. Satellite.		
27	10. 3. 29					
29	4. 31. 51					
30	23. 0. 10					

Days	Heliocentric Long. S. D. M.	Heliocentric Lat. D. M.	Geocentric Long. S. D. M.	Geocentric Lat. D. M.	Declin. D. M.	Rt. Asc. *in Time.* H. M.	Passage Merid. H. M.
	☿		*MERCURY.*			Gr. Elong. 25[d].	
1	7. 8. 35	0. 56 N	5. 25. 40	0. 19 N	2. 1 N	11. 45	1. 5
4	7. 17. 26	0. 9 S	6. 0. 21	0. 3 S	0. 11 S	12. 1	1. 11
7	7. 25. 59	1. 11	6. 4. 52	0. 27	2. 21	12. 17	1. 16
10	8. 4. 20	2. 11	6. 9. 12	0. 51	4. 26	12. 32	1. 21
13	8. 12. 35	3. 7	6. 13. 20	1. 15	6. 25	12. 47	1. 24
16	8. 20. 50	3. 59	6. 17. 16	1. 39	8. 19	13. 1	1. 28
19	8. 29. 9	4. 47	6. 20. 58	2. 3	10. 5	13. 14	1. 30
22	9. 7. 40	5. 29	6. 24. 24	2. 25	11. 43	13. 27	1. 32
25	9. 16. 27	6. 5	6. 27. 31	2. 46	13. 11	13. 38	1. 32
28	9. 25. 37	6. 33	7. 0. 15	3. 4	14. 26	13. 48	1. 31
30	10. 2. 0	6. 47	7. 1. 48	3. 14	15. 8	13. 54	1. 30
	♀		*VENUS.*				
1	10. 14. 11	2. 55 S	6. 18. 54	4. 40 S	11. 43 S	13. 3	2. 23
7	10. 23. 41	3. 10	6. 21. 51	5. 34	13. 41	13. 12	2. 11
13	11. 3. 11	3. 19	6. 23. 52	6. 27	15. 15	13. 19	1. 56
19	11. 12. 42	3. 23	6. 24. 37	7. 15	16. 16	13. 20	1. 36
25	11. 22. 13	3. 22	6. 24. 2	7. 51	16. 37	13. 17	1. 11
	♂		*MARS.*				
1	3. 2. 16	1. 17 N	3. 27. 3	0. 56 N	21. 41 N	7. 57	21. 17
7	3. 5. 9	1. 21	4. 0. 50	1. 0	20. 58	8. 13	21. 11
13	3. 8. 1	1. 25	4. 4. 36	1. 3	20. 10	8. 29	21. 5
19	3. 10. 51	1. 28	4. 8. 19	1. 7	19. 17	8. 44	20. 59
25	3. 13. 41	1. 31	4. 12. 0	1. 11	18. 21	8. 59	20. 52
	♃		*JUPITER.*				
1	2. 26. 0	0. 17 S	3. 6. 2	0. 16 S	23. 4 N	6. 26	19. 44
7	2. 26. 31	0. 17	3. 6. 57	0. 16	23. 1	6. 30	19. 27
13	2. 27. 2	0. 16	3. 7. 47	0. 15	22. 59	6. 34	19. 9
19	2. 27. 33	0. 15	3. 8. 33	0. 15	22. 56	6. 37	18. 50
25	2. 28. 3	0. 15	3. 9. 13	0. 14	22. 54	6. 40	18. 32
	♄		*SATURN.*				
1	1. 17. 44	2. 15 S	1. 23. 52	2. 20 S	16. 30 N	3. 28	16. 46
7	1. 17. 57	2. 15	1. 23. 54	2. 21	16. 29	3. 28	16. 25
13	1. 18. 10	2. 15	1. 23. 51	2. 22	16. 27	3. 28	16. 3
19	1. 18. 23	2. 14	1. 23. 44	2. 23	16. 25	3. 28	15. 41
25	1. 18. 36	2. 14	1. 23. 34	2. 25	16. 21	3. 27	15. 19
	♅		*GEORGIAN.*				
1	9. 10. 17	0. 21 S	9. 7. 42	0. 22 S	23. 36 S	18. 34	7. 53
11	9. 10. 23	0. 21	9. 7. 36	0. 22	23. 36	18. 33	7. 17
21	9. 10. 30	0. 21	9. 7. 36	0. 22	23. 36	18. 33	6. 41

Days of the Week.	Days of the Month.	The MOON's Longitude. Noon.		The MOON's Latitude. Noon.	
		Longitude. Noon.	Longitude. Midnight.	Latitude. Noon.	Latitude. Midnight.
		S. D. M. S.	S. D. M. S.	D. M. S.	D. M. S.
M.	1	3. 21. 14. 53	3. 28. 33. 41	0. 32. 5 N	0. 7. 39 S
Tu.	2	4. 5. 54. 6	4. 13. 15. 25	0. 47. 22 S	1. 26. 20
W.	3	4. 20. 36. 49	4. 27. 57. 27	2. 3. 49	2. 39. 8
Th.	4	5. 5. 16. 25	5. 12. 32. 51	3. 11. 39	3. 40. 49
F.	5	5. 19. 45. 51	5. 26. 54. 38	4. 6. 11	4. 27. 23
Sa.	6	6. 3. 58. 31	6. 10. 56. 55	4. 44. 13	4. 56. 35
Sun.	7	6. 17. 49. 26	6. 24. 35. 47	5. 4. 27	5. 7. 54
M.	8	7. 1. 15. 50	7. 7. 49. 38	5. 7. 5	5. 2. 13
Tu.	9	7. 14. 17. 19	7. 20. 39. 11	4. 53. 32	4. 41. 19
W.	10	7. 26. 55. 37	8. 3. 7. 5	4. 25. 52	4. 7. 29
Th.	11	8. 9. 14. 8	8. 15. 17. 22	3. 46. 27	3. 23. 5
F.	12	8. 21. 17. 24	8. 27. 14. 53	2. 57. 41	2. 30. 31
Sa.	13	9. 3. 10. 29	9. 9. 4. 52	2. 1. 52	1. 32. 0
Sun.	14	9. 14. 58. 41	9. 20. 52. 34	1. 1. 13 S	0. 29. 48 S
M.	15	9. 26. 47. 7	10. 2. 42. 56	0. 1. 58 N	0. 38. 48 N
Tu.	16	10. 8. 40. 32	10. 14. 40. 23	1. 5. 23	1. 36. 24
W.	17	10. 20. 42. 56	10. 26. 48. 32	2. 6. 31	2. 35. 25
Th.	18	11. 2. 57. 29	11. 9. 10. 0	3. 2. 43	3. 28. 4
F.	19	11. 15. 26. 16	11. 21. 46. 21	3. 51. 7	4. 11. 33
Sa.	20	11. 28. 10. 16	0. 4. 37. 57	4. 29. 0	4. 43. 9
Sun.	21	0. 11. 9. 18	0. 17. 44. 10	4. 53. 45	5. 0. 33
M.	22	0. 24. 22. 21	1. 1. 3. 40	5. 3. 22	5. 2. 3
Tu.	23	1. 7. 47. 52	1. 14. 34. 44	4. 56. 33	4. 46. 50
W.	24	1. 21. 24. 3	1. 28. 15. 37	4. 32. 59	4. 15. 8
Th.	25	2. 5. 9. 17	2. 12. 4. 55	3. 53. 29	3. 28. 17
F.	26	2. 19. 2. 24	2. 26. 1. 38	2. 59. 52	2. 28. 37
Sa.	27	3. 3. 2. 31	3. 10. 5. 0	1. 55. 0	1. 19. 30
Sun.	28	3. 17. 9. 1	3. 24. 14. 25	0. 42. 39 N	0. 5. 2 N
M.	29	4. 1. 21. 2	4. 8. 28. 40	0. 32. 44 S	1. 10. 3 S
Tu.	30	4. 15. 37. 2	4. 22. 45. 47	1. 46. 18	2. 20. 53

The MOON's

Days of the Month.	Age.	Pass. Merid.	Right Ascension.		Declination.	
			Noon.	Midnight.	Noon.	Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	27	21. 44	113. 3. 41	120. 39. 27	22. 18. 43 N	20. 20. 44 N
2	28	22. 39	128. 4. 32	135. 18. 10	18. 3. 5	15. 28. 41
3	29	23. 32	142. 20. 35	149. 12. 33	12. 40. 41	9. 42. 19
4	1	6	155. 55. 14	162. 30. 11	6. 36. 50	3. 27. 24 N
5	2	0. 23	168. 59. 3	175. 23. 33	0. 17. 0 N	2. 51. 33 S
6	3	1. 12	181. 45. 24	188. 6. 11	5. 55. 38 S	8. 52. 52
7	4	2. 1	194. 27. 21	200. 50. 8	11. 41. 6	14. 18. 25
8	5	2. 50	207. 15. 30	213. 44. 6	16. 43. 4	18. 53. 32
9	6	3. 40	220. 16. 16	226. 51. 57	20. 48. 33	22. 26. 58
10	7	4. 32	233. 30. 46	240. 11. 56	23. 47. 58	24. 50. 52
11	8	5. 23	246. 54. 26	253. 36. 59	25. 35. 15	26. 0. 56
12	9	6. 15	260. 18. 9	266. 56. 32	26. 7. 57	25. 56. 36
13	10	7. 6	273. 30. 51	279. 59. 58	25. 27. 23	24. 40. 58
14	11	7. 54	286. 23. 2	292. 39. 29	23. 38. 9	22. 19. 57
15	12	8. 41	298. 49. 6	304. 52. 0	20. 47. 21	19. 1. 30
16	13	9. 27	310. 48. 35	316. 39. 31	17. 3. 32	14. 54. 42
17	14	10. 10	322. 25. 40	328. 8. 7	12. 36. 10	10. 9. 16
18	15	10. 53	333. 48. 7	339. 27. 0	7. 35. 15	4. 55. 34 S
19	16	11. 37	345. 6. 16	350. 47. 27	2. 11. 34 S	0. 35. 11 N
20	17	12. 21	356. 32. 10	2. 22. 4	3. 23. 4 N	6. 10. 19
21	18	13. 7	8. 18. 48	14. 23. 58	8. 55. 8	11. 35. 29
22	19	13. 56	20. 39. 5	27. 5. 33	14. 9. 13	16. 34. 3
23	20	14. 48	33. 44. 21	40. 36. 8	18. 47. 36	20. 47. 26
24	21	15. 45	47. 41. 0	54. 58. 20	22. 31. 5	23. 56. 9
25	22	16. 44	62. 26. 50	70. 4. 25	25. 0. 29	25. 42. 13
26	23	17. 45	77. 48. 19	85. 35. 16	25. 59. 55	25. 52. 49
27	24	18. 45	93. 21. 52	101. 4. 53	25. 20. 44	24. 24. 6
28	25	19. 44	108. 41. 31	116. 9. 35	23. 4. 4	21. 22. 18
29	26	20. 39	123. 27. 43	130. 35. 20	19. 20. 51	17. 2. 8
30	27	21. 31	137. 32. 31	144. 19. 57	14. 28. 42	11. 43. 18

Days of the Week.	Days of the Month.	The Moon's Semidiameter. Noon. M. S.	The Moon's Semidiameter. Midnight. M. S.	The Moon's Hor. Parallax. Noon. M. S.	The Moon's Hor. Parallax. Midnight. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
M.	1	16. 23	16. 25	60. 8	60. 15	4762	4753
Tu.	2	16. 26	16. 26	60. 19	60. 19	4748	4748
W.	3	16. 25	16. 23	60. 15	60. 8	4753	4762
Th.	4	16. 20	16. 16	59. 58	59. 44	4774	4791
F.	5	16. 12	16. 7	59. 27	59. 7	4811	4836
Sa.	6	16. 1	15. 54	58. 45	58. 22	4863	4891
Sun.	7	15. 47	15. 41	57. 57	57. 32	4922	4954
M.	8	15. 34	15. 27	57. 6	56. 41	4986	5018
Tu.	9	15. 20	15. 14	56. 17	55. 55	5049	5077
W.	10	15. 9	15. 3	55. 34	55. 15	5105	5129
Th.	11	14. 59	14. 55	54. 58	54. 43	5152	5172
F.	12	14. 52	14. 49	54. 31	54. 22	5187	5199
Sa.	13	14. 47	14. 46	54. 16	54. 12	5207	5213
Sun.	14	14. 46	14. 46	54. 10	54. 10	5215	5215
M.	15	14. 46	14. 48	54. 13	54. 18	5211	5205
Tu.	16	14. 50	14. 52	54. 25	54. 34	5195	5183
W.	17	14. 55	14. 58	54. 45	54. 57	5169	5153
Th.	18	15. 2	15. 6	55. 10	55. 24	5136	5118
F.	19	15. 10	15. 14	55. 39	55. 54	5098	5079
Sa.	20	15. 18	15. 23	56. 10	56. 26	5058	5037
Sun.	21	15. 27	15. 31	56. 42	56. 57	5017	4998
M.	22	15. 35	15. 39	57. 12	57. 27	4979	4960
Tu.	23	15. 43	15. 47	57. 41	57. 55	4942	4925
W.	24	15. 50	15. 54	58. 8	58. 20	4908	4894
Th.	25	15. 57	15. 59	58. 31	58. 41	4880	4868
F.	26	16. 2	16. 4	58. 50	58. 59	4856	4845
Sa.	27	16. 6	16. 8	59. 7	59. 13	4836	4828
Sun.	28	16. 10	16. 11	59. 19	59. 24	4821	4815
M.	29	16. 12	16. 12	59. 27	59. 28	4811	4810
Tu.	30	16. 12	16. 11	59. 27	59. 25	4811	4814

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	1	46. 57. 13	45. 14. 51	43. 32. 28	41. 49. 58	40. 7. 22	- - -	- - -	- - -
Antares.	7	49. 17. 48	47. 36. 1	45. 54. 38	44. 13. 40	42. 33. 5	40. 52. 54	39. 13. 6	37. 33. 42
	8	35. 54. 42	34. 16. 5	32. 37. 50	30. 59. 58	29. 22. 30	- - -	- - -	- - -
α Aquilæ.	8	- - -	- - -	- - -	- - -	85. 4. 30	83. 39. 38	82. 15. 9	80. 51. 4
	9	79. 27. 24	78. 4. 9	76. 41. 21	75. 19. 0	73. 57. 5	72. 35. 38	71. 14. 41	69. 54. 14
	10	68. 34. 16	67. 14. 49	65. 55. 55	64. 37. 34	63. 19. 46	62. 2. 33	60. 45. 56	59. 20. 56
	11	58. 14. 32	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Fomalhaut.	11	81. 19. 34	79. 56. 33	78. 33. 48	77. 11. 18	75. 49. 4	74. 27. 7	73. 5. 26	71. 44. 1
	12	70. 22. 54	69. 2. 4	67. 41. 31	66. 21. 15	65. 1. 18	63. 41. 39	62. 22. 19	61. 3. 18
	13	59. 44. 38	58. 26. 20	57. 8. 24	55. 50. 51	54. 33. 41	- - -	- - -	- - -
α Pegasi.	13	- - -	- - -	- - -	- - -	73. 33. 21	72. 7. 59	70. 42. 41	69. 17. 26
	14	67. 52. 16	66. 27. 10	65. 2. 8	63. 37. 9	62. 12. 14	60. 47. 23	59. 22. 35	57. 57. 52
	15	56. 33. 14	55. 8. 40	53. 44. 10	52. 19. 46	50. 55. 29	49. 31. 19	48. 7. 17	46. 43. 24
	16	45. 19. 39	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	16	86. 23. 42	84. 53. 59	83. 24. 7	81. 54. 6	80. 23. 57	78. 53. 39	77. 23. 10	75. 52. 32
	17	74. 21. 45	72. 50. 47	71. 19. 39	69. 48. 20	68. 16. 50	66. 45. 9	65. 13. 17	63. 41. 14
	18	62. 8. 59	60. 36. 33	59. 3. 56	57. 31. 7	55. 58. 6	54. 24. 53	52. 51. 29	51. 17. 53
	19	49. 44. 6	48. 10. 7	46. 35. 57	45. 1. 37	43. 27. 6	41. 52. 24	40. 17. 33	38. 42. 32
	20	37. 7. 21	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	*Midnight.* D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Aldebaran.	20	69. 46. 58	68. 12. 4	66. 36. 59	65. 1. 43	63. 26. 17	61. 50. 41	60. 14. 55	58. 39. 0
	21	57. 2. 57	55. 26. 45	53. 50. 24	52. 13. 57	50. 37. 24	49. 0. 44	47. 23. 59	45. 47. 11
	22	44. 10. 20	42. 33. 26	40. 56. 31	39. 19. 39	37. 42. 50	36. 6. 4	34. 29. 24	32. 52. 57
	23	31. 16. 47	29. 40. 56	28. 5. 27	26. 30. 24	24. 55. 50	- - -	- - -	- - -
Pollux.	23	- - -	- - -	- - -	- - -	65. 51. 28	64. 10. 24	62. 29. 11	60. 47. 50
	24	59. 6. 21	57. 24. 44	55. 43. 0	54. 1. 9	52. 19. 12	50. 37. 8	48. 54. 58	47. 12. 42
	25	45. 30. 22	43. 47. 58	42. 5. 29	40. 22. 57	38. 40. 23	- - -	- - -	- - -
Regulus.	25	- - -	- - -	- - -	- - -	75. 17. 43	73. 33. 39	71. 49. 26	70. 5. 6
	26	68. 20. 38	66. 36. 2	64. 51. 19	63. 6. 28	61. 21. 30	59. 36. 25	57. 51. 13	56. 5. 54
	27	54. 20. 29	52. 34. 58	50. 49. 20	49. 3. 36	47. 17. 46	- - -	- - -	- - -
The Sun.	24	- - -	- - -	- - -	- - -	- - -	- - -	119. 33. 30	117. 57. 54
	25	116. 22. 8	114. 46. 12	113. 10. 8	111. 33. 55	109. 57. 33	108. 21. 3	106. 44. 24	105. 7. 37
	26	103. 30. 41	101. 53. 37	100. 16. 25	98. 39. 5	97. 1. 38	95. 24. 3	93. 46. 21	92. 8. 32
	27	90. 30. 35	88. 52. 31	87. 14. 21	85. 36. 4	83. 57. 41	82. 19. 11	80. 40. 35	79. 1. 54
	28	77. 23. 7	75. 44. 15	74. 5. 17	72. 26. 15	70. 47. 9	69. 7. 58	67. 28. 44	65. 49. 27
	29	64. 10. 6	62. 30. 42	60. 51. 17	59. 11. 50	57. 32. 21	55. 52. 51	54. 13. 21	52. 33. 52
	30	50. 54. 23	49. 14. 55	47. 35. 30	45. 56. 7	44. 16. 48	42. 37. 33	40. 58. 23	39. 19. 19

DISTANCES of the MOON's *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
The Sun.	7	- - -	- - -	- - -	- - -	40. 21. 38	41. 54. 6	43. 26. 11	44. 57. 55
	8	46. 29. 17	48. 0. 17	49. 30. 54	51. 1. 10	52. 31. 4	54. 0. 36	55. 29. 46	56. 58. 35
	9	58. 27. 4	59. 55. 12	61. 22. 59	62. 50. 27	64. 17. 35	65. 44. 24	67. 10. 54	68. 37. 6
	10	70. 3. 1	71. 28. 38	72. 53. 58	74. 19. 1	75. 43. 48	77. 8. 20	78. 32. 38	79. 56. 41
	11	81. 20. 31	82. 44. 8	84. 7. 32	85. 30. 44	86. 53. 44	88. 16. 34	89. 39. 13	91. 1. 42
	12	92. 24. 2	93. 46. 14	95. 8. 17	96. 30. 13	97. 52. 2	99. 13. 45	100. 35. 21	101. 56. 53
	13	103. 18. 20	104. 39. 43	106. 1. 2	107. 22. 20	108. 43. 35	110. 4. 48	111. 25. 59	112. 47. 10
	14	114. 8. 20	115. 29. 31	116. 50. 42	118. 11. 55	119. 33. 9	120. 54. 25	- - -	- - -
Spica ♍.	11	- - -	- - -	- - -	- - -	53. 51. 34	55. 21. 43	56. 51. 42	58. 21. 31
	12	59. 51. 12	61. 20. 45	62. 50. 10	64. 19. 28	65. 48. 39	67. 17. 44	68. 46. 45	70. 15. 41
	13	71. 44. 32	73. 13. 19	74. 42. 4	76. 10. 47	77. 39. 27	- - -	- - -	- - -
Antares.	13	- - -	- - -	- - -	- - -	31. 52. 15	33. 21. 0	34. 49. 45	36. 18. 29
	14	37. 47. 14	39. 16. 0	40. 44. 46	42. 13. 35	43. 42. 26	45. 11. 19	46. 40. 16	48. 9. 16
	15	49. 38. 21	51. 7. 31	52. 36. 46	54. 6. 6	55. 35. 33	57. 5. 6	58. 34. 46	60. 4. 33
	16	61. 34. 28	63. 4. 31	64. 34. 42	66. 5. 2	67. 35. 31	69. 6. 9	70. 36. 58	72. 7. 57
	17	73. 39. 6	75. 10. 26	76. 41. 56	78. 13. 37	79. 45. 30	81. 17. 35	82. 49. 51	84. 22. 19
	18	85. 54. 59	87. 27. 51	89. 0. 56	90. 34. 14	92. 7. 44	93. 41. 27	95. 15. 23	96. 49. 32
	19	98. 23. 54	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
α Aquilæ.	19	50. 31. 43	51. 45. 55	53. 1. 1	54. 17. 1	55. 33. 52	56. 51. 32	58. 9. 57	59. 29. 6
	20	60. 48. 56	62. 9. 24	63. 30. 29	64. 52. 10	66. 14. 23	67. 37. 7	69. 0. 21	70. 24. 2
	21	71. 48. 9	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Fomalhaut.	21	46. 51. 59	48. 13. 50	49. 36. 34	51. 0. 8	52. 24. 30	53. 49. 37	55. 15. 26	56. 41. 55
	22	58. 9. 2	59. 36. 43	61. 4. 56	62. 33. 40	64. 2. 54	65. 32. 35	67. 2. 41	68. 33. 11
	23	70. 4. 5	71. 35. 20	73. 6. 55	74. 38. 49	76. 11. 1	77. 43. 30	79. 16. 15	80. 49. 15
	24	82. 22. 28	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Pegasi.	24	60. 34. 18	62. 12. 5	63. 50. 9	65. 28. 29	67. 7. 5	68. 45. 56	70. 25. 2	72. 4. 22
	25	73. 43. 55	75. 23. 41	77. 3. 38	78. 43. 47	80. 24. 7	- - -	- - -	- - -
α Arietis.	25	- - -	- - -	- - -	- - -	37. 9. 47	38. 53. 0	40. 36. 25	42. 20. 2
	26	44. 3. 50	45. 47. 49	47. 31. 59	49. 16. 20	51. 0. 51	52. 45. 30	54. 30. 19	56. 15. 16
	27	58. 0. 22	59. 45. 36	61. 30. 58	63. 16. 28	65. 2. 6	66. 47. 51	68. 33. 43	70. 19. 42
	28	72. 5. 48	73. 52. 0	75. 38. 17	77. 24. 40	79. 11. 8	- - -	- - -	- - -
Aldebaran.	28	- - -	- - -	- - -	- - -	47. 9. 47	48. 54. 15	50. 38. 54	52. 23. 44
	29	54. 8. 44	55. 53. 53	57. 39. 11	59. 24. 36	61. 10. 8	62. 55. 45	64. 41. 27	66. 27. 14
	30	68. 13. 4	69. 58. 57	71. 44. 52	73. 30. 49	75. 16. 46	77. 2. 43	78. 48. 40	80. 34. 35
	O. 1	82. 20. 28	- - -	- - -	- - -	- - -	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, at IV o'Clock in the *Morning*.

Days of the Week.	Days of the Month.	Sundays, and other remarkable Days.
W.	1	Remigius.
Th.	2	
F.	3	
Sa.	4	
Sun.	5	19*th Sunday aft. Trinity.*
M.	6	Faith.
Tu.	7	
W.	8	
Th.	9	St. Denys.
F.	10	Oxf. and Camb. T. beg.
Sa.	11	
Sun.	12	20*th Sunday aft. Trinity.*
M.	13	Transl. of K. Edw. Conf.
Tu.	14	
W.	15	
Th.	16	
F.	17	Ethelred.
Sa.	18	*St. Luke.*
Sun.	19	21*st Sunday aft. Trinity.*
M.	20	
Tu.	21	
W.	22	
Th.	23	
F.	24	
Sa.	25	Crispin.
Sun.	26	22d *Sunday after Trinity.*
M.	27	
Tu.	28	*St. Simon and St. Jude.*
W.	29	
Th.	30	
F.	31	

Phases of the MOON.

	D. H. M.
● New Moon	3. 20. 41
☽ *First Quarter* . . .	11. 14. 7
○ Full Moon	19. 10. 11
☾ *Last Quarter*	26. 7. 44

Other *Phenomena.*

D. H. M.	
8. 4. 24½	Im. 2¼′ N. of *α* ♏, * } of ☽'s Cent.
8. 5. 44½	E. 0½′ S. } of ☽'s Cent.
8. - . -	☿ Stationary.
10. 17. 34	☽ ♅.
20. - . -	♂ *α* ♌, ♂ 61′ N. of ✱.
23. 17. 19	☉ enters ♏.
24. 19. 7	☽ ♃.
28. - . -	♃ Stationary.
29. - . -	☿ Stationary.
31. 2. 22	☽ ♀.

Days of the Week.	Days of the Month.	THE SUN'S Longitude.	Rt. Ascen. in Time.	Declin. South.	Diff.	Equation of Time. Sub. from app. Time.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	M. S.	S.
W.	1	6. 7. 29. 9	12. 27. 29, 5	2. 58. 25	23. 20	10. 8, 1	19, 0
Th.	2	6. 8. 28. 15	12. 31. 7, 1	3. 21. 45	23. 19	10. 27, 1	18, 7
F.	3	6. 9. 27. 24	12. 34. 44, 9	3. 45. 4	23. 15	10. 45, 8	18, 3
Sa.	4	6. 10. 26. 34	12. 38. 23, 0	4. 8. 19	23. 13	11. 4, 1	18, 0
Sun.	5	6. 11. 25. 47	12. 42. 1, 6	4. 31. 32	23. 10	11. 22, 1	17, 6
M.	6	6. 12. 25. 2	12. 45. 40, 4	4. 54. 42	23. 6	11. 39, 7	17, 3
Tu.	7	6 13. 24. 18	12. 49. 19, 7	5. 17. 48	23. 1	11. 57, 0	16, 9
W.	8	6. 14. 23. 37	12. 52. 59, 3	5. 40. 49	22. 58	12. 13, 9	16, 5
Th.	9	6. 15. 22. 57	12. 56. 39, 3	6. 3. 47	22. 52	12. 30, 4	16, 0
F.	10	6. 16. 22. 19	13. 0. 19, 7	6. 26. 39	22. 47	12. 46, 4	15, 6
Sa.	11	6. 17. 21. 43	13. 4. 0, 7	6. 49. 26	22. 42	13. 2, 0	15, 2
Sun.	12	6. 18. 21. 8	13. 7. 42, 0	7. 12. 8	22. 35	13. 17, 2	14, 7
M.	13	6. 19. 20. 36	13. 11. 23, 8	7. 34. 43	22. 29	13. 31, 9	14, 2
Tu.	14	6. 20. 20. 5	13. 15. 6, 2	7. 57. 12	22. 23	13. 46, 1	13, 7
W.	15	6. 21. 19. 36	13. 18. 49, 0	8. 19. 35	22. 15	13. 59, 8	13, 1
Th.	16	6. 22. 19. 8	13. 22. 32, 4	8. 41. 50	22. 8	14. 12, 9	12, 6
F.	17	6. 23. 18. 42	13. 26. 16, 3	9. 3. 58	22. 0	14. 25, 5	12, 0
Sa.	18	6. 24. 18. 19	13. 30. 0, 8	9. 25. 58	21. 51	14. 37, 5	11, 4
Sun.	19	6. 25. 17. 57	13. 33. 45, 9	9. 47. 49	21. 44	14. 48, 9	10, 8
M.	20	6. 26. 17. 38	13. 37. 31, 6	10. 9. 33	21. 34	14. 59, 7	10, 2
Tu.	21	6. 27. 17. 20	13. 41. 18, 0	10. 31. 7	21. 25	15. 9, 9	9, 5
W.	22	6. 28. 17. 4	13. 45. 5, 0	10. 52. 32	21. 15	15. 19, 4	8, 8
Th.	23	6. 29. 16. 51	13. 48. 52, 7	11. 13. 47	21. 6	15. 28, 2	8, 1
F.	24	7. 0. 16. 40	13. 52. 41, 2	11. 34. 53	20. 54	15. 36, 3	7, 4
Sa.	25	7. 1. 16. 31	13. 56. 30, 3	11. 55. 47	20. 44	15. 43, 7	6, 7
Sun.	26	7. 2. 16. 25	14. 0. 20, 1	12. 16. 31	20. 33	15. 50, 4	5, 9
M.	27	7. 3. 16. 21	14. 4. 10, 8	12. 37. 4	20. 22	15. 56, 3	5, 2
Tu.	28	7. 4. 16. 19	14. 8. 2, 2	12. 57. 26	20. 9	16. 1, 5	4, 4
W.	29	7. 5. 16. 20	14. 11. 54, 3	13. 17. 35	19. 57	16. 5, 9	3, 6
Th.	30	7. 6. 16. 22	14. 15. 47, 3	13. 37. 32	19. 44	16. 9, 5	2, 8
F.	31	7. 7. 16. 27	14. 19. 41, 0	13. 57. 16		16. 12, 3	

Days	Time of ☉'s Semidiam. passing Merid.	The SUN's Semi-diameter.	The SUN's Hourly Motion.	The SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 4, 1	16. 1, 0	2. 27, 7	0. 000203	9. 23. 50
7	1. 4, 4	16. 2, 6	2. 28, 2	9. 999453	9. 23. 31
13	1. 4, 8	16. 4, 3	2. 28, 7	9. 998683	9. 23. 12
19	1. 5, 3	16. 5, 9	2. 29, 2	9. 997940	9. 22. 53
25	1. 5, 9	16. 7, 5	2. 29, 7	9. 997234	9. 22. 33

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite. Immersions. Days.	H. M. S.	II. Satellite. Immersions. Days.	H. M. S.	III. Satellite. Days.	H. M. S.	
*2	17. 28. 32	*2	12. 11. 11	3	21. 37. 21	Im.
*4	11. 56. 50	6	1. 28. 46	4	0. 31. 11	E.
6	6. 25. 12	*9	14. 47. 19	11	1. 35. 55	Im.
8	0. 53. 30	13	4. 4. 56	11	4. 30. 39	E.
9	19. 21. 52	*16	17. 23. 36	18	5. 35. 6	Im.
*11	13. 50. 10	20	6. 41. 13	18	8. 30. 47	E.
13	8. 18. 31	23	19. 59. 57	25	9. 33. 25	Im.
15	2. 46. 50	27	9. 17. 37	*25	12. 30. 0	E.
16	21. 15. 11	30	22. 36. 25			
*18	15. 43. 29					
*20	10. 11. 51					
22	4. 40. 9					
23	23. 8. 29					
*25	17. 36. 48					
*27	12. 5. 9			IV. Satellite.		
29	6. 33. 28					
31	1. 1. 49					

The Planets'

Days	Heliocentric Long. S. D. M.	Heliocentric Lat. D. M.	Geocentric Long. S. D. M.	Geocentric Lat. D. M.	Declin. D. M.	Rt. Asc. in Time. H. M.	Passage Merid. H. M.
☿			*MERCURY.*			Inf. ☌ 19^d. $16\frac{1}{2}^h$.	
1	10. 5. 18	6. 52 S	7. 2. 29	3. 18 S	15. 27 S	13. 56	1. 29
4	10. 15. 37	7. 0	7. 4. 5	3. 27	16. 8	14. 2	1. 24
7	10. 26. 44	6. 53	7. 4. 50	3. 28	16. 25	14. 5	1. 16
10	11. 8. 48	6. 28	7. 4. 33	3. 19	16. 10	14. 4	1. 4
13	11. 21. 59	5. 41	7. 3. 4	2. 57	15. 19	13. 59	0. 48
16	0. 6. 26	4. 30	7. 0. 22	2. 18	13. 46	13. 50	0. 27
19	0. 22. 14	2. 51	6. 26. 49	1. 25	11. 40	13. 37	0. 4
22	1. 9. 22	0. 51 S	6. 23. 10	0. 23 S	9. 24	13. 25	23. 33
25	1. 27. 34	1. 23 N	6. 20. 25	0. 35 N	7. 26	13. 16	23. 15
28	2. 16. 25	3. 32	6. 19. 12	1. 22	6. 15	13. 13	23. 2
31	3. 5. 16	5. 18	6. 19. 40	1. 54	5. 57	13. 16	22. 55
♀			*VENUS.*			Inf. ☌ 10^d. $10\frac{3}{4}^h$.	
1	0. 1. 46	3. 15 S	6. 22. 2	8. 8 S	16. 8 S	13. 9	0. 41
7	0. 11. 19	3. 3	6. 18. 55	7. 58	14. 46	12. 57	0. 8
13	0. 20. 53	2. 45	6. 15. 16	7. 15	12. 42	12. 45	23. 28
19	1. 0. 28	2. 23	6. 11. 57	6. 6	10. 20	12. 34	22. 56
25	1. 10. 4	1. 57	6. 9. 40	4. 41	8. 8	12. 28	22. 28
♂			*MARS.*				
1	3. 16. 29	1. 34 N	4. 15. 38	1. 15 N	17. 22 N	9. 14	20. 45
7	3. 19. 15	1. 37	4. 19. 14	1. 19	16. 19	9. 28	20. 38
13	3. 22. 1	1. 40	4. 22. 48	1. 23	15. 15	9. 42	20. 30
19	3. 24. 46	1. 42	4. 26. 18	1. 27	14. 8	9. 56	20. 21
25	3. 27. 29	1. 44	4. 29. 46	1. 32	13. 0	10. 10	20. 12
♃			*JUPITER.*			□ 3^d. $13\frac{1}{4}^h$.	
1	2. 28. 34	0. 14 S	3. 9. 48	0. 14 S	22. 52 N	6. 43	18. 13
7	2. 29. 5	0. 13	3. 10. 17	0. 14	22. 50	6. 45	17. 53
13	2. 29. 35	0. 12	3. 10. 39	0. 13	22. 49	6. 46	17. 32
19	3. 0. 6	0. 12	3. 10. 55	0. 13	22. 48	6. 47	17. 11
25	3. 0. 37	0. 11	3. 11. 4	0. 12	22. 48	6. 48	16. 49
♄			*SATURN.*				
1	1. 18. 49	2. 14 S	1. 23. 20	2. 25 S	16. 17 N	3. 26	14. 56
7	1. 19. 2	2. 14	1. 23. 3	2. 26	16. 12	3. 25	14. 33
13	1. 19. 15	2. 13	1. 22. 42	2. 27	16. 6	3. 24	14. 10
19	1. 19. 29	2. 13	1. 22. 19	2. 28	15. 59	3. 22	13. 46
25	1. 19. 42	2. 13	1. 21. 54	2. 28	15. 52	3. 21	13. 22
♅			*GEORGIAN.*			□ 1^d. $4\frac{3}{4}^h$.	
1	9. 10. 37	0. 21 S	9. 7. 41	0. 22 S	23. 36 S	18. 34	6. 5
11	9. 10. 44	0. 22	9. 7. 50	0. 21	23. 35	18. 34	5. 29
21	9. 10. 51	0. 22	9. 8. 5	0. 21	23. 34	18. 35	4. 53

Days of the Week.	Days of the Month.	THE MOON's Longitude. Noon. S. D. M. S.	Longitude. Midnight. S. D. M. S.	Latitude. Noon. D. M. S.	Latitude. Midnight. D. M. S.
W.	1	4. 29. 54. 28	5. 7. 2. 33	2. 53. 11 S	3. 22. 41 S
Th.	2	5. 14. 9. 30	5. 21. 14. 41	3. 48. 54	4. 11. 27
F.	3	5. 28. 17. 26	6. 5. 17. 9	4. 29. 59	4. 44. 18
Sa.	4	6. 12. 13. 12	6. 19. 5. 3	4. 54. 15	4. 59. 49
Sun.	5	6. 25. 52. 15	7. 2. 34. 26	5. 1. 4	4. 58. 7
M.	6	7. 9. 11. 22	7. 15. 42. 54	4. 51. 10	4. 40. 27
Tu.	7	7. 22. 9. 3	7. 28. 29. 57	4. 26. 18	4. 9. 0
W.	8	8. 4. 45. 50	8. 10. 57. 1	3. 48. 53	3. 26. 16
Th.	9	8. 17. 3. 56	8. 23. 7. 6	3. 1. 31	2. 34. 55
F.	10	8. 29. 7. 6	9. 5. 4. 33	2. 6. 48	1. 37. 28
Sa.	11	9. 11. 0. 5	9. 16. 54. 24	1. 7. 14	0. 36. 22 S
Sun.	12	9. 22. 48. 12	9. 28. 42. 10	0. 5. 9 S	0. 26. 8 N
M.	13	10. 4. 37. 0	10. 10. 33. 23	0. 57. 12 N	1. 27. 46
Tu.	14	10. 16. 31. 57	10. 22. 33. 20	1. 57. 31	2. 26. 10
W.	15	10. 28. 38. 4	11. 4. 46. 39	2. 53. 23	3. 18. 52
Th.	16	11. 10. 59. 31	11. 17. 17. 1	3. 42. 14	4. 3. 11
F.	17	11. 23. 39. 21	0. 0. 6. 42	4. 21. 21	4. 36. 25
Sa.	18	0. 6. 39. 7	0. 13. 16. 28	4. 48. 2	4. 55. 56
Sun.	19	0. 19. 58. 33	0. 26. 45. 5	4. 59. 51	4. 59. 36
M.	20	1. 3. 35. 42	1. 10. 29. 56	4. 55. 4	4. 46. 11
Tu.	21	1. 17. 27. 16	1. 24. 27. 9	4. 32. 59	4. 15. 35
W.	22	2. 1. 29. 2	2. 8. 32. 24	3. 54. 11	3. 29. 8
Th.	23	2. 15. 36. 46	2. 22. 41. 41	3. 0. 46	2. 29. 32
F.	24	2. 29. 46. 46	3. 6. 51. 42	1. 55. 57	1. 20. 32
Sa.	25	3. 13. 56. 16	3. 21. 0. 16	0. 43. 53 N	0. 6. 35 N
Sun.	26	3. 28. 3. 34	4. 5. 6. 5	0. 30. 46 S	1. 7. 35 S
M.	27	4. 12. 7. 43	4. 19. 8. 24	1. 43. 16	2. 17. 19
Tu.	28	4. 26. 8. 3	5. 3. 6. 33	2. 49. 11	3. 18. 25
W.	29	5. 10. 3. 45	5. 16. 59. 26	3. 44. 34	4. 7. 18
Th.	30	5. 23. 53. 24	6. 0. 45. 22	4. 26. 18	4. 41. 20
F.	31	6. 7. 35. 2	6. 14. 22. 3	4. 52. 14	4. 58. 56

THE MOON'S

Days of the Month.	Age.	Pass. Merid.	Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	28	22. 21	150. 58. 45	157. 30. 21	8. 48. 45 N	5. 47. 46 N
2	29	23. 10	163. 56. 21	170. 18. 27	2. 43. 5 N	0. 22. 39 S
3	30	23. 59	176. 38. 21	182. 57. 39	3. 26. 50 S	6. 26. 59
4	1	☌	189. 17. 50	195. 40. 12	9. 20. 45	12. 5. 55
5	2	0. 48	202. 5. 48	208. 35. 22	14. 40. 24	17. 2. 19
6	3	1. 38	215. 9. 17	221. 47. 32	19. 9. 56	21. 1. 46
7	4	2. 30	228. 29. 44	235. 15. 5	22. 36. 36	23. 53. 27
8	5	3. 22	242. 2. 25	248. 50. 18	24. 51. 37	25. 30. 44
9	6	4. 15	255. 37. 9	262. 21. 21	25. 50. 44	25. 51. 50
10	7	5. 6	269. 1. 24	275. 35. 58	25. 34. 29	24. 59. 24
11	8	5. 56	282. 4. 1	288. 24. 54	24. 7. 29	22. 59. 42
12	9	6. 43	294. 38. 19	300. 44. 19	21. 37. 8	20. 0. 54
13	10	7. 29	306. 43. 17	312. 35. 55	18. 12. 9	16. 12. 3
14	11	8. 13	318. 23. 11	324. 6. 11	14. 1. 44	11. 42. 19
15	12	8. 56	329. 46. 13	335. 24. 44	9. 14. 59	6. 40. 55
16	13	9. 38	341. 3. 17	346. 43. 31	4. 1. 23 S	1. 17. 42 S
17	14	10. 22	352. 27. 8	358. 15. 53	1. 28. 42 N	4. 16. 11 N
18	15	11. 8	4. 11. 35	10. 15. 56	7. 2. 59	9. 47. 8
19	16	11. 57	16. 30. 33	22. 56. 57	12. 26. 25	14. 58. 28
20	17	12. 48	29. 36. 21	36. 29. 30	17. 20. 46	19. 30. 36
21	18	13. 45	43. 36. 35	50. 57. 5	21. 25. 10	23. 1. 48
22	19	14. 45	58. 29. 37	66. 11. 58	24. 17. 57	25. 11. 32
23	20	15. 46	74. 1. 7	81. 53. 29	25. 40. 54	25. 45. 3
24	21	16. 47	89. 45. 20	97. 33. 0	25. 23. 47	24. 37. 36
25	22	17. 45	105. 13. 18	112. 43. 50	23. 27. 41	21. 55. 48
26	23	18. 41	120. 3. 5	127. 10. 23	20. 4. 8	17. 55. 7
27	24	19. 32	134. 5. 50	140. 50. 12	15. 31. 21	12. 55. 26
28	25	20. 22	147. 24. 44	153. 50. 58	10. 9. 55	7. 17. 21
29	26	21. 9	160. 10. 41	166. 25. 45	4. 20. 10 N	1. 20. 42 N
30	27	21. 57	172. 38. 2	178. 49. 21	1. 38. 47 S	4. 36. 4 S
31	28	22. 44	185. 1. 25	191. 15. 45	7. 29. 1	10. 15. 31

Days of the Week.	Days of the Month.	The Moon's Semidiameter. Noon. M. S.	Semidiameter. Midnight. M. S.	Hor. Parallax. Noon. M. S.	Hor. Parallax. Midnight. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
W.	1	16. 10	16. 8	59. 21	59. 14	4819	4827
Th.	2	16. 6	16. 3	59. 5	58. 54	4838	4852
F.	3	15. 59	15. 55	58. 40	58. 25	4869	4887
Sa.	4	15. 50	15. 45	58. 8	57. 49	4908	4932
Sun.	5	15. 40	15. 34	57. 29	57. 9	4957	4983
M.	6	15. 28	15. 22	56. 48	56. 27	5009	5036
Tu.	7	15. 17	15. 12	56. 6	55. 46	5063	5089
W.	8	15. 7	15. 2	55. 28	55. 11	5112	5135
Th.	9	14. 58	14. 54	54. 55	54. 42	5156	5173
F.	10	14. 51	14. 49	54. 31	54. 22	5187	5199
Sa.	11	14. 47	14. 46	54. 16	54. 13	5207	5211
Sun.	12	14. 46	14. 47	54. 12	54. 14	5213	5210
M.	13	14. 48	14. 50	54. 18	54. 25	5205	5195
Tu.	14	14. 52	14. 55	54. 34	54. 46	5183	5168
W.	15	14. 59	15. 3	55. 0	55. 16	5149	5129
Th.	16	15. 8	15. 13	55. 33	55. 51	5106	5082
F.	17	15. 18	15. 24	56. 10	56. 30	5058	5032
Sa.	18	15. 30	15. 35	56. 50	57. 10	5007	4981
Sun.	19	15. 40	15. 45	57. 30	57. 49	4956	4932
M.	20	15. 50	15. 54	58. 6	58. 21	4911	4892
Tu.	21	15. 58	16. 1	58. 36	58. 48	4874	4859
W.	22	16. 4	16. 7	58. 58	59. 7	4847	4836
Th.	23	16. 8	16. 10	59. 14	59. 18	4827	4822
F.	24	16. 10	16. 10	59. 20	59. 21	4820	4819
Sa.	25	16. 10	16. 10	59. 20	59. 18	4820	4822
Sun.	26	16. 9	16. 7	59. 15	59. 10	4826	4832
M.	27	16. 6	16. 4	59. 4	58. 58	4839	4847
Tu.	28	16. 1	15. 59	58. 51	58. 42	4855	4866
W.	29	15. 57	15. 54	58. 32	58. 22	4879	4891
Th.	30	15. 51	15. 48	58. 11	57. 59	4905	4920
F.	31	15. 44	15. 41	57. 46	57. 32	4936	4954

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	Noon. D. M. S.	III[h]. D. M. S.	VI[h]. D. M. S.	IX[h]. D. M. S.	Midnight. D. M. S.	XV[h]. D. M. S.	XVIII[h]. D. M. S.	XXI[h]. D. M. S.
α Aquilæ.	6	- - -	- - -	- - -	- - -	78. 7. 33	76. 43. 29	75. 19. 33	73. 56. 14
	7	72. 33. 21	71. 10. 57	69. 49. 4	68. 27. 41	67. 6. 50	65. 46. 31	64. 26. 47	63. 7. 39
	8	61. 49. 6	60. 31. 11	59. 13. 57	57. 57. 23	56. 41. 30	- - -	- - -	- - -
Fomalhaut.	8	- - -	- - -	- - -	- - -	79. 50. 43	78. 26. 55	77. 3. 27	75. 40. 16
	9	74. 17. 25	72. 54. 53	71. 32. 40	70. 10. 48	68. 49. 16	67. 28. 3	66. 7. 13	64. 46. 43
	10	63. 26. 36	62. 6. 50	60. 47. 28	59. 28. 31	58. 9. 58	56. 51. 51	55. 34. 12	54. 17. 0
	11	53. 0. 16	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Pegasi.	11	71. 36. 54	70. 11. 24	68. 46. 0	67. 20. 43	65. 55. 33	64. 30. 29	63. 5. 32	61. 40. 42
	12	60. 15. 58	58. 51. 20	57. 26. 50	56. 2. 26	54. 38. 9	53. 13. 58	51. 49. 55	50. 26. 1
	13	49. 2. 15	47. 38. 37	46. 15. 11	44. 51. 57	43. 28. 55	42. 6. 8	40. 43. 38	39. 21. 25
	14	37. 59. 30	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	14	78. 30. 36	77. 0. 40	75. 30. 34	74. 0. 17	72. 29. 50	70. 59. 12	69. 28. 21	67. 57. 19
	15	66. 26. 5	64. 54. 38	63. 22. 57	61. 51. 3	60. 18. 56	58. 46. 34	57. 13. 58	55. 41. 8
	16	54. 8. 4	52. 34. 44	51. 1. 10	49. 27. 21	47. 53. 17	46. 18. 58	44. 44. 24	43. 9. 36
	17	41. 34. 33	39. 59. 16	38. 23. 45	36. 48. 0	35. 12. 2	- - -	- - -	- - -
Aldebaran.	17	- - -	- - -	- - -	- - -	67. 53. 6	66. 17. 10	64. 40. 59	63. 4. 32
	18	61. 27. 50	59. 50. 53	58. 13. 43	56. 36. 19	54. 58. 42	53. 20. 51	51. 42. 50	50. 4. 38
	19	48. 26. 16	46. 47. 42	45. 9. 2	43. 30. 16	41. 51. 24	40. 12. 26	38. 33. 27	36. 54. 30
	20	35. 15. 36	33. 36. 49	31. 58. 11	30. 19. 44	28. 41. 31	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	IIIh. D. M. S.	VIh. D. M. S.	IXh. D. M. S.	Midnight. D. M. S.	XVh. D. M. S.	XVIIIh. D. M. S.	XXIh. D. M. S.
Pollux.	20	- - -	- - -	- - -	- - -	69. 54. 38	68. 11. 39	66. 28. 29	64. 45. 9
	21	63. 1. 39	61. 18. 0	59. 34. 13	57. 50. 18	56. 6. 16	54. 22. 7	52. 37. 54	50. 53. 36
	22	49. 9. 14	47. 24. 47	45. 40. 19	43. 55. 51	42. 11. 21	40. 26. 53	38. 42. 28	36. 58. 7
	23	35. 13. 49	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	23	71. 46. 10	70. 0. 3	68. 13. 53	66. 27. 41	64. 41. 27	62. 55. 11	61. 8. 54	59. 22. 36
	24	57. 36. 18	55. 50. 0	54. 3. 43	52. 17. 27	50. 31. 12	48. 44. 58	46. 58. 46	45. 12. 37
	25	43. 26. 30	41. 40. 26	39. 54. 26	38. 8. 31	36. 22. 40	34. 36. 53	32. 51. 14	31. 5. 41
	26	29. 20. 15	27. 34. 57	25. 49. 50	24. 4. 53	22. 20. 6	- - -	- - -	- - -
The Sun.	24	120. 28. 45	118. 50. 12	117. 11. 38	115. 33. 3	113. 54. 28	112. 15. 52	110. 37. 18	108. 58. 43
	25	107. 20. 10	105. 41. 38	104. 3. 7	102. 24. 39	100. 46. 12	99. 7. 47	97. 29. 25	95. 51. 6
	26	94. 12. 50	92. 34. 37	90. 56. 28	89. 18. 22	87. 40. 20	86. 2. 22	84. 24. 28	82. 46. 38
	27	81. 8. 53	79. 31. 12	77. 53. 37	76. 16. 6	74. 38. 41	73. 1. 21	71. 24. 7	69. 46. 58
	28	68. 9. 56	66. 33. 0	64. 56. 11	63. 19. 28	61. 42. 52	60. 6. 23	58. 30. 1	56. 53. 47
	29	55. 17. 41	53. 41. 43	52. 5. 54	50. 30. 13	48. 54. 42	47. 19. 20	45. 44. 8	44. 9. 6
	30	42. 34. 15	40. 59. 35	39. 25. 7	- - -	- - -	- - -	- - -	- - -

DISTANCES of the Moon's *Centre* from the Sun, and from Stars *WEST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Pollux.	1	40. 12. 23	41. 58. 8	43. 43. 54	45. 29. 40	47. 15. 26	49. 1. 10	50. 46. 52	52. 32. 30
	2	54. 18. 4	56. 3. 33	57. 48. 54	59. 34. 8	61. 19. 14	- - -	- - -	- - -
The Sun.	7	38. 57. 34	40. 24. 51	41. 51. 53	43. 18. 58	44. 45. 8	46. 11. 22	47. 37. 20	49. 3. 3
	8	50. 28. 31	51. 53. 43	53. 18. 41	54. 43. 25	56. 7. 54	57. 32. 9	58. 56. 10	60. 19. 59
	9	61. 43. 34	63. 6. 56	64. 30. 8	65. 53. 7	67. 15. 56	68. 38. 34	70. 1. 2	71. 23. 21
	10	72. 45. 31	74. 7. 32	75. 29. 25	76. 51. 11	78. 12. 49	79. 34. 21	80. 55. 48	82. 17. 9
	11	83. 38. 26	84. 59. 38	86. 20. 48	87. 41. 55	89. 2. 59	90. 24. 1	91. 45. 3	93. 6. 4
	12	94. 27. 4	95. 48. 5	97. 9. 7	98. 30. 11	99. 51. 17	101. 12. 26	102. 33. 38	103. 54. 55
	13	105. 16. 16	106. 37. 42	107. 59. 15	109. 20. 53	110. 42. 38	112. 4. 29	113. 26. 29	114. 48. 37
	14	116. 10. 53	117. 33. 18	118. 55. 53	120. 18. 39	- - -	- - -	- - -	- - -
Antares.	11	- - -	- - -	- - -	- - -	39. 45. 4	41. 13. 50	42. 42. 36	44. 11. 22
	12	45. 40. 8	47. 8. 54	48. 37. 42	50. 6. 33	51. 35. 25	53. 4. 20	54. 33. 19	56. 2. 23
	13	57. 31. 31	59. 0. 44	60. 30. 4	61. 59. 31	63. 29. 4	64. 58. 45	66. 28. 34	67. 58. 32
	14	69. 28. 39	70. 58. 56	72. 29. 24	74. 0. 2	75. 30. 51	77. 1. 52	78. 33. 6	80. 4. 32
	15	81. 36. 10	83. 8. 2	84. 40. 8	86. 12. 28	87. 45. 3	89. 17. 52	90. 50. 57	92. 24. 18
	16	93. 57. 54	95. 31. 47	97. 5. 56	98. 40. 22	100. 15. 4	101. 50. 3	103. 25. 20	105. 0. 54
	17	106. 36. 45	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Aquilæ.	17	57. 3. 30	58. 22. 40	59. 42. 37	61. 3. 18	62. 24. 41	63. 46. 45	65. 9. 28	66. 32. 48
	18	67. 56. 44	69. 21. 13	70. 46. 15	72. 11. 47	73. 37. 47	- - -	- - -	- - -
Fomalhaut.	18	- - -	- - -	- - -	- - -	48. 37. 40	50. 1. 39	51. 26. 33	52. 52. 18
	19	54. 18. 52	55. 46. 13	57. 14. 18	58. 43. 5	60. 12. 31	61. 42. 33	63. 13. 9	64. 44. 19
	20	66. 15. 59	67. 48. 6	69. 20. 41	70. 53. 42	72. 27. 6	74. 0. 52	75. 34. 59	77. 9. 26
	21	78. 44. 9	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α. Pegasi.	21	56. 52. 30	58. 31. 55	60. 11. 39	61. 51. 43	63. 32. 5	65. 12. 43	66. 53. 37	68. 34. 46
	22	70. 16. 8	71. 57. 42	73. 39. 27	75. 21. 22	77. 3. 27	78. 45. 40	80. 27. 59	82. 10. 25
	23	83. 52. 58	85. 35. 36	87. 18. 17	89. 1. 1	90. 43. 49	- - -	- - -	- - -
α Arietis.	23	- - -	- - -	- - -	- - -	47. 44. 29	49. 30. 14	51. 16. 3	53. 1. 55
	24	54. 47. 50	56. 33. 47	58. 19. 46	60. 5. 46	61. 51. 47	63. 37. 49	65. 23. 50	67. 9. 51
	25	68. 55. 52	70. 41. 52	72. 27. 50	74. 13. 46	75. 59. 40	- - -	- - -	- - -
Aldebaran.	25	- - -	- - -	- - -	- - -	43. 57. 28	45. 41. 7	47. 24. 52	49. 8. 41
	26	50. 52. 36	52. 36. 34	54. 20. 33	56. 4. 35	57. 48. 39	59. 32. 42	61. 16. 45	63. 0. 47
	27	64. 44. 49	66. 28. 49	68. 12. 46	69. 56. 41	71. 40. 33	73. 24. 22	75. 8. 7	76. 51. 47
	28	78. 35. 24	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	28	36. 32. 16	38. 15. 19	39. 58. 23	41. 41. 27	43. 24. 33	45. 7. 38	46. 50. 41	48. 33. 41
	29	50. 16. 40	51. 59. 34	53. 42. 23	55. 25. 8	57. 7. 49	58. 50. 24	60. 32. 52	62. 15. 15
	30	63. 57. 31	65. 39. 40	67. 21. 40	69. 3. 33	70. 45. 18	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER,
At II o'Clock in the *Morning*.

Day		West	Jupiter	East	
1	.3○	·2	○	·1 ·4	
2		·1	○	·2 ·3 ·4	
3	2.●		○	1· 3· ·4	
4		·2 ·1	○	3· 4·	
5	1.●	3·	○	·2 4·	
6		3·	○	·1 2· 4·	
7		·3 2·1·	○	4·	
8		·2 3&4	○	·1	
9		4· ·1	○	·2 ·3	
10		4·	○	2·1· 3·	
11		4· 2· ·1	○	3·	
12		·4 3·	○		1.● .2○
13		·4 3·	○	2·	.1○
14		·4 ·3 2·1·	○		
15		·4 ·2 ·3	○	·1	
16	.4○	1·	○	·2 ·3	
17			○	2·1· ·4 ·3	
18		2· ·1	○	3· ·4	
19	3.●	·2	○	1· ·4	
20	.1○	3·	○	2· ·4	
21		·3 2·1·	○	4·	
22		·2 ·3	○	·1 4·	
23		1·	○	2&3 4·	
24			○	4·1&2 ·3	
25		2·1&4	○	3·	
26	3.●	4· ·2	○	1·	
27		4· 3· ·1	○	·2	
28		4· ·3	○		2.● 1.●
29		·4 2&3	○	·1	
30		·4 1·	○	2&3	
31		·4	○	·1 2· ·3	

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
Sa.	1	*All Saints.*
Sun.	2	*23d Sun. aft. Trin.* All [Souls.
M.	3	*Prs. Sophia b.* On Mor. of [All Souls. 1 ret.
Tu.	4	
W.	5	*Powder Plot,* 1605.
Th.	6	Mich. T. beg. Leonard.
F.	7	
Sa.	8	*Prs. Aug. Sophia b.*
Sun.	9	*24th Sunday aft. Trinity.*
M.	10	
Tu.	11	St. Martin.
W.	12	Camb. T. div. m. On Mor. [of St. Mart. 2 ret.
Th.	13	Britius.
F.	14	
Sa.	15	*Machutus.*
Sun.	16	*25th Sunday aft. Trinity.*
M.	17	Hugh Bp. of Lincoln.
Tu.	18	In 8 days of St. Mart. 3 ret.
W.	19	
Th.	20	Edm. K. and Martyr.
F.	21	
Sa.	22	Cecilia.
Sun.	23	*26th Sunday aft. Trinity.* [St. Clement.
M.	24	
Tu.	25	Cath. In 15 days of St. [Martin, 4 ret.
W.	26	
Th.	27	
F.	28	Mich. Term ends.
Sa.	29	
Sun.	30	*Adv. Sunday. St. Andrew.*

Phases of the MOON.

	D. H. M.
● New Moon . . .	2. 9. 40
☽ *First Quarter* . .	10. 10. 52
○ Full Moon . . .	17. 22. 21
☾ *Last Quarter* . .	24. 15. 33

Other *Phenomena.*

D. H. M.	
1. - -	♀ Stationary.
4. 13. 34	☽ α ♏.
7. 3. 32	☽ ♅.
18. - - -	☿ 2α ♎, ☿ 60½′ N. of ✱.
21. 0. 27	☽ ♃.
22. 13. 45	☉ enters ♐.
30. - -	☿ β ♏, ☿ 61½′ S. of ✱.

Days of the Week.	Days of the Month.	The Sun's Longitude.	The Sun's Rt. Ascen. in Time.	The Sun's Declin. South.	Diff.	Equation of Time. *Sub. from app. Time.*	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S.	M. S.	S.
Sa.	1	7. 8. 16. 34	14. 23. 35, 6	14. 16. 46	19. 16	16. 14, 3	1, 2
Sun.	2	7. 9. 16. 43	14. 27. 30, 9	14. 36. 2	19. 3	16. 15, 5	0, 4
M.	3	7. 10. 16. 54	14. 31. 27, 0	14. 55. 5	18. 48	16. 15, 9	0, 4
Tu.	4	7. 11. 17. 7	14. 35. 24, 0	15. 13. 53	18. 33	16. 15, 5	1, 2
W.	5	7. 12. 17. 21	14. 39. 21, 8	15. 32. 26	18. 17	16. 14, 3	2, 1
Th.	6	7. 13. 17. 37	14. 43. 20, 4	15. 50. 43	18. 2	16. 12, 2	2, 8
F.	7	7. 14. 17. 55	14. 47. 19, 8	16. 8. 45	17. 45	16. 9, 4	3, 7
Sa.	8	7. 15. 18. 14	14. 51. 20, 0	16. 26. 30	17. 29	16. 5, 7	4, 5
Sun.	9	7. 16. 18. 35	14. 55. 21, 1	16. 43. 59	17. 11	16. 1, 2	5, 3
M.	10	7. 17. 18. 57	14. 59. 23, 0	17. 1. 10	16. 54	15. 55, 9	6, 1
Tu.	11	7. 18. 19. 20	15. 3. 25, 7	17. 18. 4	16. 36	15. 49, 8	7, 0
W.	12	7. 19. 19. 45	15. 7. 29, 2	17. 34. 40	16. 18	15. 42, 8	7, 8
Th.	13	7. 20. 20. 11	15. 11. 33, 6	17. 50. 58	15. 59	15. 35, 0	8, 7
F.	14	7. 21. 20. 39	15. 15. 38, 8	18. 6. 57	15. 40	15. 26, 3	9, 4
Sa.	15	7. 22. 21. 8	15. 19. 44, 9	18. 22. 37	15. 20	15. 16, 9	10, 3
Sun.	16	7. 23. 21. 38	15. 23. 51, 8	18. 37. 57	15. 1	15. 6, 6	11, 2
M.	17	7. 24. 22. 10	15. 27. 59, 5	18. 52. 58	14. 40	14. 55, 4	11, 9
Tu.	18	7. 25. 22. 44	15. 32. 8, 0	19. 7. 38	14. 20	14. 43, 5	12, 8
W.	19	7. 26. 23. 18	15. 36. 17, 4	19. 21. 58	13. 59	14. 30, 7	13, 6
Th.	20	7. 27. 23. 55	15. 40. 27, 6	19. 35. 57	13. 37	14. 17, 1	14, 5
F.	21	7. 28. 24. 33	15. 44. 38, 7	19. 49. 34	13. 16	14. 2, 6	15, 3
Sa.	22	7. 29. 25. 13	15. 48. 50, 6	20. 2. 50	12. 54	13. 47, 3	16, 1
Sun.	23	8. 0. 25. 54	15. 53. 3, 3	20. 15. 44	12. 32	13. 31, 2	16, 9
M.	24	8. 1. 26. 38	15. 57. 16, 8	20. 28. 16	12. 9	13. 14, 3	17, 7
Tu.	25	8. 2. 27. 23	16. 1. 31, 1	20. 40. 25	11. 46	12. 56, 6	18, 5
W.	26	8. 3. 28. 9	16. 5. 46, 2	20. 52. 11	11. 22	12. 38, 1	19, 3
Th.	27	8. 4. 28. 58	16. 10. 2, 1	21. 3. 33	10. 59	12. 18, 8	20, 0
F.	28	8. 5. 29. 48	16. 14. 18, 7	21. 14. 32	10. 35	11. 58, 8	20, 7
Sa.	29	8. 6. 30. 39	16. 18. 36, 0	21. 25. 7	10. 10	11. 38, 1	21, 4
Sun.	30	8. 7. 31. 32	16. 22. 54, 1	21. 35. 17		11. 16, 7	

Days	Time of ☉'s Semidiam. passing Merid.	The SUN's Semi-diameter.	The SUN's Hourly Motion.	The SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 6, 7	16. 9, 3	2. 30, 3	9. 996452	9. 22. 11
7	1. 7, 4	16. 10, 8	2. 30, 7	9. 995799	9. 21. 52
13	1. 8, 1	16. 12, 1	2. 31, 2	9. 995177	9. 21. 33
19	1. 8, 8	16. 13, 4	2. 31, 5	9. 994617	9. 21. 14
25	1. 9, 4	16. 14, 5	2. 31, 9	9. 994138	9. 20. 55

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite.		II. Satellite.		III. Satellite.	
Immersions.		*Immersions.*			
Days.	H. M. S.	Days.	H. M. S.	Days.	H. M. S.
1	19. 30. 8	*3	11. 54. 8	*1	13. 31. 39 Im.
*3	13. 58. 29	7	1. 13. 0	*1	16. 29. 8 E.
5	8. 26. 49	*10	14. 30. 45	*8	17. 29. 43 Im.
7	2. 55. 9	14	3. 49. 40	8	20. 28. 2 E.
8	21. 23. 30	*17	17. 7. 29	15	21. 27. 54 Im.
*10	15. 51. 51	21	6. 26. 28	16	0. 27. 11 E.
*12	10. 20. 12	24	19. 44. 18	23	1. 26. 54 Im.
14	4. 48. 33	*28	9. 3. 19	23	4. 27. 3 E.
15	23. 16. 54			30	5. 25. 41 Im.
*17	17. 45. 16			*30	8. 26. 43 E.
*19	12. 13. 38				
21	6. 42. 0				
23	1. 10. 23				
24	19. 38. 45			IV. Satellite.	
*26	14. 7. 9			*26	8. 12. 58 Im.
*28	8. 35. 32			*26	8. 49. 42 E.
30	3. 3. 56				

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Rt. Asc. *in Time.*	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
☿			*MERCURY.*			Gr. Elong. 4^{d}.	
1	3. 11. 26	5. 45 N	6. 20. 10	2. 1 N	6. 2 S	13. 18	22. 53
4	3. 29. 19	6. 42	6. 22. 30	2. 13	6. 43	13. 27	22. 51
7	4. 15. 57	7. 0	6. 25. 47	2. 14	7. 54	13. 39	22. 52
10	5. 1. 10	6. 46	6. 29. 42	2. 7	9. 24	13. 54	22. 55
13	5. 14. 59	6. 9	7. 3. 59	1. 55	11. 4	14. 10	23. 0
16	5. 27. 31	5. 16	7. 8. 30	1. 38	12. 48	14. 27	23. 4
19	6. 8. 58	4. 15	7. 13. 7	1. 20	14. 32	14. 44	23. 10
22	6. 19. 32	3. 9	7. 17. 49	0. 59	16. 12	15. 3	23. 16
25	6. 29. 22	2. 2	7. 22. 31	0. 39	17. 48	15. 21	23. 22
28	7. 8. 39	0. 56	7. 27. 14	0. 18	19. 16	15. 40	23. 28
30	7. 14. 36	0. 12	8. 0. 23	0. 4	20. 11	15. 53	23. 32
♀			*VENUS.*				
1	1. 21. 17	1. 22 S	6. 8. 49	2. 59 S	6. 15 S	12. 28	22. 1
7	2. 0. 56	0. 50	6. 9. 40	1. 39	5. 21	12. 33	21. 43
13	2. 10. 35	0. 16 S	6. 11. 44	0. 29 S	5. 5	12. 42	21. 29
19	2. 20. 16	0. 18 N	6. 14. 52	0. 30 N	5. 24	12. 56	21. 18
25	2. 29. 58	0. 52	6. 18. 49	1. 18	6. 10	13. 11	21. 9
♂			*MARS.*				
1	4. 0. 39	1. 46 N	5. 3. 44	1. 36 N	11. 39 N	10. 25	20. 0
7	4. 3. 21	1. 47	5. 7. 5	1. 41	10. 29	10. 38	19. 49
13	4. 6. 2	1. 49	5. 10. 21	1. 45	9. 19	10. 50	19. 37
19	4. 8. 42	1. 50	5. 13. 33	1. 50	8. 10	11. 2	19. 24
25	4. 11. 22	1. 50	5. 16. 41	1. 55	7. 1	11. 14	19. 11
♃			*JUPITER.*				
1	3. 1. 12	0. 10 S	3. 11. 5	0. 11 S	22. 49 N	6. 48	16. 22
7	3. 1. 43	0. 10	3. 10. 58	0. 11	22. 50	6. 48	15. 58
13	3. 2. 14	0. 9	3. 10. 44	0. 10	22. 52	6. 47	15. 32
19	3. 2. 44	0. 8	3. 10. 23	0. 10	22. 54	6. 45	15. 6
25	3. 3. 15	0. 7	3. 9. 56	0. 9	22. 57	6. 43	14. 39
♄			*SATURN.*			☍ 13^{d}. $1\frac{1}{2}^{h}$.	
1	1. 19. 57	2. 13 S	1. 21. 22	2. 28 S	15. 44 N	3. 18	12. 53
7	1. 20. 10	2. 12	1. 20. 53	2. 28	15. 36	3. 16	12. 27
13	1. 20. 23	2. 12	1. 20. 24	2. 29	15. 28	3. 15	12. 1
19	1. 20. 36	2. 12	1. 19. 54	2. 28	15. 22	3. 13	11. 34
25	1. 20. 50	2. 12	1. 19. 26	2. 27	15. 15	3. 11	11. 7
♅			*GEORGIAN.*				
1	9. 10. 58	0. 22 S	9. 8. 27	0. 21 S	23. 33 S	18. 37	4. 13
11	9. 11. 5	0. 22	9. 8. 51	0. 21	23. 31	18. 39	3. 35
21	9. 11. 12	0. 22	9. 9. 18	0. 21	23. 29	18. 41	2. 55

Days of the Week.	Days of the Month.	THE MOON'S Longitude. Noon. S. D. M. S.	Longitude. Midnight. S. D. M. S.	Latitude. Noon. D. M. S.	Latitude. Midnight. D. M. S.
Sa.	1	6. 21. 6. 6	6. 27. 46. 54	5. 1. 22 S	4. 59. 41 S
Sun.	2	7. 4. 24. 4	7. 10. 57. 24	4. 53. 56	4. 44. 20
M.	3	7. 17. 26. 41	7. 23. 51. 48	4. 31. 7	4. 14. 33
Tu.	4	8. 0. 12. 41	8. 6. 29. 22	3. 54. 58	3. 32. 42
W.	5	8. 12. 41. 57	8. 18. 50. 39	3. 8. 6	2. 41. 30
Th.	6	8. 24. 55. 46	9. 0. 57. 38	2. 13. 16	1. 43. 43
F.	7	9. 6. 56. 42	9. 12. 53. 29	1. 13. 13	0. 42. 4 S
Sa.	8	9. 18. 48. 32	9. 24. 42. 28	0. 10. 35 S	0. 20. 57 N
Sun.	9	10. 0. 35. 53	10. 6. 29. 28	0. 52. 14 N	1. 23. 0
M.	10	10. 12. 23. 55	10. 18. 19. 55	1. 52. 57	2. 21. 49
Tu.	11	10. 24. 18. 9	11. 0. 19. 19	2. 49. 19	3. 15. 9
W.	12	11. 6. 24. 2	11. 12. 32. 56	3. 39. 1	4. 0. 38
Th.	13	11. 18. 46. 35	11. 25. 5. 29	4. 19. 40	4. 35. 49
F.	14	0. 1. 30. 2	0. 8. 0. 30	4. 48. 45	4. 58. 9
Sa.	15	0. 14. 37. 6	0. 21. 19. 53	5. 3. 45	5. 5. 17
Sun.	16	0. 28. 8. 43	1. 5. 3. 22	5. 2. 31	4. 55. 19
M.	17	1. 12. 3. 28	1. 19. 8. 28	4. 43. 37	4. 27. 25
Tu.	18	1. 26. 17. 42	2. 3. 30. 25	4. 6. 52	3. 42. 12
W.	19	2. 10. 45. 49	2. 18. 3. 2	3. 13. 45	2. 41. 59
Th.	20	2. 25. 21. 14	3. 2. 39. 35	2. 7. 26	1. 30. 44
F.	21	3. 9. 57. 20	3. 17. 13. 51	0. 52. 32 N	0. 13. 33 N
Sa.	22	3. 24. 28. 33	4. 1. 40. 58	0. 25. 32 S	1. 4. 2 S
Sun.	23	4. 8. 50. 45	4. 15. 57. 37	1. 41. 18	2. 16. 45
M.	24	4. 23. 1. 25	5. 0. 2. 2	2. 49. 51	3. 20. 8
Tu.	25	5. 6. 59. 24	5. 13. 53. 31	3. 47. 12	4. 10. 45
W.	26	5. 20. 44. 23	5. 27. 32. 3	4. 30. 30	4. 46. 16
Th.	27	6. 4. 16. 32	6. 10. 57. 50	4. 57. 55	5. 5. 24
F.	28	6. 17. 36. 0	6. 24. 11. 2	5. 8. 42	5. 7. 53
Sa.	29	7. 0. 42. 56	7. 7. 11. 42	5. 3. 3	4. 54. 20
Sun.	30	7. 13. 37. 18	7. 19. 59. 42	4. 41. 57	4. 26. 9

THE MOON's

Days of the Month.	Age.	Pass. Merid.	Right Ascension.		Declination.	
			Noon.	Midnight.	Noon.	Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	29	23. 33	197. 33. 41	203. 56. 16	12. 53. 32 S	15. 21. 7 S
2	1	☌	210. 24. 10	216. 57. 39	17. 36. 23	19. 37. 36
3	2	0. 24	223. 36. 34	230. 20. 20	21. 23. 12	22. 51. 51
4	3	1. 16	237. 7. 51	243. 57. 40	24. 2. 30	24. 54. 24
5	4	2. 8	250. 48. 1	257. 37. 2	25. 27. 8	25. 40. 38
6	5	3. 0	264. 22. 51	271. 3. 40	25. 35. 10	25. 11. 21
7	6	3. 51	277. 38. 4	284. 5. 0	24. 30. 1	23. 32. 12
8	7	4. 39	290. 23. 49	296. 34. 17	22. 19. 2	20. 51. 45
9	8	5. 25	302. 36. 34	308. 31. 14	19. 11. 36	17. 19. 48
10	9	6. 8	314. 19. 10	320. 1. 29	15. 17. 33	13. 6. 1
11	10	6. 51	325. 39. 27	331. 14. 31	10. 46. 18	8. 19. 30
12	11	7. 32	336. 48. 22	342. 22. 43	5. 46. 42	3. 9. 2 S
13	12	8. 15	347. 59. 23	353. 40. 16	0. 27. 41 S	2. 16. 1 N
14	13	8. 58	359. 27. 19	5. 22. 31	5. 0. 39 N	7. 44. 33
15	14	9. 45	11. 27. 51	17. 45. 11	10. 25. 49	13. 2. 20
16	15	10. 35	24. 16. 12	31. 2. 16	15. 31. 42	17. 51. 9
17	16	11. 30	38. 4. 15	45. 22. 19	19. 57. 47	21. 48. 34
18	17	12. 30	52. 55. 40	60. 42. 32	23. 20. 28	24. 30. 39
19	18	13. 32	68. 40. 3	76. 44. 26	25. 16. 43	25. 36. 54
20	19	14. 36	84. 51. 16	92. 55. 58	25. 30. 18	24. 56. 57
21	20	15. 36	100. 54. 16	108. 42. 41	23. 57. 48	22. 34. 36
22	21	16. 34	116. 18. 44	123. 41. 1	20. 49. 43	18. 45. 55
23	22	17. 27	130. 49. 7	137. 43. 32	16. 26. 11	13. 53. 31
24	23	18. 16	144. 25. 26	150. 56. 25	11. 10. 50	8. 20. 51
25	24	19. 4	157. 18. 20	163. 33. 14	5. 26. 7 N	2. 29. 1 N
26	25	19. 50	169. 43. 12	175. 50. 18	0. 28. 17 S	3. 23. 43 S
27	26	20. 36	181. 56. 28	188. 3. 31	6. 15. 20	9. 1. 18
28	27	21. 24	194. 13. 5	200. 26. 34	11. 39. 51	14. 9. 11
29	28	22. 12	206. 45. 3	213. 9. 16	16. 27. 37	18. 33. 30
30	29	23. 3	219. 39. 30	226. 15. 35	20. 25. 18	22. 1. 34

Days of the Week.	Days of the Month.	The MOON's Semidiameter. Noon. M. S.	Semidiameter. Midnight. M. S.	Hor. Parallax. Noon. M. S.	Hor. Parallax. Midnight. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
Sa.	1	15. 36	15. 32	57. 17	57. 1	4972	4993
Sun.	2	15. 28	15. 23	56. 45	56. 29	5013	5034
M.	3	15. 18	15. 14	56. 12	55. 56	5055	5076
Tu.	4	15. 10	15. 6	55. 40	55. 24	5097	5118
W.	5	15. 2	14. 58	55. 9	54. 55	5137	5156
Th.	6	14. 55	14. 52	54. 43	54. 32	5172	5186
F.	7	14. 49	14. 47	54. 23	54. 16	5198	5207
Sa.	8	14. 46	14. 45	54. 11	54. 9	5214	5217
Sun.	9	14. 45	14. 46	54. 9	54. 11	5217	5214
M.	10	14. 47	14. 49	54. 16	54. 24	5207	5197
Tu.	11	14. 52	14. 56	54. 34	54. 47	5183	5166
W.	12	15. 0	15. 5	55. 2	55. 20	5146	5123
Th.	13	15. 10	15. 16	55. 40	56. 2	5097	5068
F.	14	15. 22	15. 29	56. 25	56. 49	5039	5008
Sa.	15	15. 36	15. 43	57. 14	57. 39	4976	4945
Sun.	16	15. 50	15. 56	58. 4	58. 27	4913	4885
M.	17	16. 2	16. 7	58. 49	59. 10	4858	4832
Tu.	18	16. 12	16. 16	59. 28	59. 43	4810	4792
W.	19	16. 19	16. 22	59. 55	60. 4	4776	4766
Th.	20	16. 23	16. 24	60. 9	60. 11	4760	4758
F.	21	16. 23	16. 22	60. 10	60. 5	4759	4765
Sa.	22	16. 20	16. 18	59. 58	59. 49	4774	4784
Sun.	23	16. 15	16. 11	59. 37	59. 24	4799	4815
M.	24	16. 7	16. 3	59. 9	58. 54	4833	4852
Tu.	25	15. 59	15. 54	58. 38	58. 21	4871	4892
W.	26	15. 49	15. 45	58. 5	57. 48	4912	4933
Th.	27	15. 41	15. 36	57. 32	57. 16	4954	4974
F.	28	15. 32	15. 28	56. 59	56. 44	4995	5014
Sa.	29	15. 23	15. 19	56. 29	56. 14	5034	5053
Sun.	30	15. 16	15. 12	56. 0	55. 45	5071	5090

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Fomalhaut.	5	78. 19. 14	76. 55. 16	75. 31. 36	74. 8. 15	72. 45. 12	71. 22. 29	70. 0. 7	68. 38. 6
	6	67. 16. 27	65. 55. 9	64. 34. 16	63. 13. 46	61. 53. 41	60. 34. 1	59. 14. 48	57. 56. 2
	7	56. 37 43	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Pegasi.	7	75. 26. 39	74. 0. 13	72. 33. 58	71. 7. 53	69. 41. 58	68. 16. 13	66. 50. 38	65. 25. 12
	8	63. 59. 56	62. 34. 49	61. 9. 51	59. 45. 3	58. 20. 25	56. 55. 56	55. 31. 38	54. 7. 30
	9	52. 43. 32	51. 19. 44	49. 56. 8	48. 32. 44	47. 9. 33	45. 46. 35	44. 23. 52	43. 1. 24
	10	41. 39. 11	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	10	82. 35. 43	81. 7. 0	79. 38. 10	78. 9. 15	76. 40. 13	75. 11. 4	73. 41. 47	72. 12. 21
	11	70. 42. 47	69. 13. 3	67. 43. 9	66. 13. 5	64. 42. 50	63. 12. 23	61. 41. 44	60. 10. 52
	12	58. 39. 48	57. 8. 30	55. 36. 58	54. 5. 12	52. 33. 11	51. 0. 54	49. 28. 22	47. 55. 34
	13	46. 22. 31	44. 49. 11	43. 15. 34	41. 41. 42	40. 7. 33	38. 33. 8	36. 58. 26	35. 23. 27
	14	33. 48. 12	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Aldebaran.	14	66. 32. 42	64. 57. 23	63. 21. 45	61. 45. 47	60. 9. 30	58. 32. 54	56. 55. 59	55. 18. 47
	15	53. 41. 16	52. 3. 26	50. 25. 20	48. 46. 58	47. 8. 20	45. 29. 26	43. 50. 19	42. 11. 0
	16	40. 31. 31	38. 51. 49	37. 12. 2	35. 32. 12	33. 52. 20	32. 12. 31	30. 32. 48	28. 53. 13
	17	27. 13. 48	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Pollux.	17	68. 22. 17	66. 37. 37	64. 52. 39	63. 7. 25	61. 21. 54	59. 36. 7	57. 50. 8	56. 3. 55
	18	54. 17. 29	52. 30. 51	50. 44. 4	48. 57. 8	47. 10. 4	45. 22. 53	43. 35. 37	41. 48. 17
	19	40. 0. 53	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	19	76. 36. 58	74. 47. 55	72. 58. 46	71. 9. 30	69. 20. 8	67. 30. 40	65. 41. 10	63. 51. 36
	20	62. 2. 0	60. 12. 22	58. 22. 45	56. 33. 8	54. 43. 32	52. 53. 58	51. 4. 28	49. 15. 1
	21	47. 25. 39	45. 36. 22	43. 47. 12	41. 58. 9	40. 9. 14	38. 20. 28	36. 31. 52	34. 43. 28
	22	32. 55. 14	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	22	86. 53. 40	85. 5. 3	83. 16. 36	81. 28. 19	79. 40. 13	77. 52. 17	76. 4. 33	74. 17. 0
	23	72. 29. 38	70. 42. 28	68. 55. 32	67. 8. 47	65. 22. 16	63. 35. 58	61. 49. 53	60. 4. 2
	24	58. 18. 25	56. 33. 1	54. 47. 52	53. 2. 56	51. 18. 15	- - -	- - -	- - -
The Sun.	22	- - -	- - -	121. 35. 8	119. 54. 37	118. 14. 16	116. 34. 4	114. 54. 4	113. 14. 13
	23	111. 34. 34	109. 55. 6	108. 15. 50	106. 36. 47	104. 57. 55	103. 19. 16	101. 40. 50	100. 2. 37
	24	98. 24. 36	96. 46. 49	95. 9. 15	93. 31. 54	91. 54. 47	90. 17. 53	88. 41. 14	87. 4. 47
	25	85. 28. 35	83. 52. 36	82. 16. 51	80. 41. 19	79. 6. 1	77. 30. 56	75. 56. 5	74. 21. 28
	26	72. 47. 4	71. 12. 53	69. 38. 56	68. 5. 12	66. 31. 42	64. 58. 24	63. 25. 19	61. 52. 28
	27	60. 19. 49	58. 47. 23	57. 15. 10	55. 43. 10	54. 11. 23	52. 39. 48	51. 8. 25	49. 37. 15
	28	48. 6. 18	46. 35. 33	45. 5. 0	43. 34. 40	42. 4. 33	40. 34. 38	39. 4. 56	- - -

DISTANCES of the Moon's *Centre* from the Sun, and from Stars *WEST* of her.

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
The Sun.	5	- - -	- - -	- - -	- - -	- - -	- - -	38. 55. 1	40. 18. 7
	6	41. 41. 3	43. 3. 50	44. 26. 28	45. 48. 58	47. 11. 19	48. 33. 31	49. 55. 36	51. 17. 33
	7	52. 39. 23	54. 1. 5	55. 22. 41	56. 44. 11	58. 5. 35	59. 26. 52	60. 48. 5	62. 9. 14
	8	63. 30. 18	64. 51. 19	66. 12. 17	67. 33. 12	68. 54. 5	70. 14. 56	71. 35. 46	72. 56. 36
	9	74. 17. 25	75. 38. 14	76. 59. 5	78. 19. 58	79. 40. 53	81. 1. 51	82. 22. 52	83. 43. 58
	10	85. 5. 8	86. 26. 23	87. 47. 44	89. 9. 11	90. 30. 45	91. 52. 26	93. 14. 16	94. 36. 15
	11	95. 58. 23	97. 20. 40	98. 43. 9	100. 5. 48	101. 28. 39	102. 51. 41	104. 14. 57	105. 38. 26
	12	107. 2. 8	108. 26. 5	109. 50. 17	111. 14. 44	112. 39. 27	114. 4. 26	115. 29. 42	116. 55. 16
	13	118. 21. 6	119. 47. 14	121. 13. 42	- - -	- - -	- - -	- - -	- - -
Antares.	10	- - -	- - -	- - -	- - -	71. 18. 25	72. 47. 55	74. 17. 33	75. 47. 21
	11	77. 17. 17	78. 47. 23	80. 17. 40	81. 48. 9	83. 18. 48	84. 49. 39	86. 20. 44	87. 52. 2
	12	89. 23. 34	90. 55. 20	92. 27. 22	93. 59. 40	95. 32. 13	97. 5. 3	98. 38. 10	100. 11. 35
	13	101. 45. 18	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Aquilæ.	13	53. 0. 0	54. 15. 52	55. 32. 36	56. 50. 12	58. 8. 37	59. 27. 49	60. 47. 48	62. 8. 32
	14	63. 29. 58	64. 52. 5	66. 14. 51	67. 38. 17	69. 2. 19	70. 26. 57	71. 52. 11	73. 17. 59
	15	74. 44. 18	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Fomalhaut.	15	49. 49. 0	51. 13. 17	52. 38. 30	54. 4. 39	55. 31. 40	56. 59. 32	58. 28. 12	59. 57. 38
	16	61. 27. 48	62. 58. 39	64. 30. 9	66. 2. 18	67. 35. 3	69. 8. 22	70. 42. 14	72. 16. 37
	17	73. 51. 29	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
α Pegasi.	17	51. 46. 48	53. 26. 38	55. 6. 59	56. 47. 50	58. 29. 12	60. 11. 1	61. 53. 16	63. 35. 55
	18	65. 18. 58	67. 2. 22	68. 46. 6	70. 30. 9	72. 14. 30	73. 59. 8	75. 43. 59	77. 29. 4
	19	79. 14. 22	- - -	- - -	- - -	- - -	- - -	- - -	- - -
α Arietis.	19	35. 55. 34	37. 43. 40	39. 31. 58	41. 20. 28	43. 9. 9	44. 57. 59	46. 46. 55	48. 35. 58
	20	50. 25. 8	52. 14. 21	54. 3. 36	55. 52. 53	57. 42. 12	59. 31. 31	61. 20. 49	63. 10. 5
	21	64. 59. 20	66. 48. 32	68. 37. 38	70. 26. 41	72. 15. 38	- - -	- - -	- - -
Aldebaran.	21	- - -	- - -	- - -	- - -	40. 14. 23	42. 0. 38	43. 46. 55	45. 33. 15
	22	47. 19. 38	49. 6. 1	50. 52. 21	52. 38. 39	54. 24. 54	56. 11. 3	57. 57. 6	59. 43. 2
	23	61. 28. 51	63. 14. 31	65. 0. 1	66. 45. 22	68. 30. 34	70. 15. 35	72. 0. 25	73. 45. 4
	24	75. 29. 31	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	24	33. 32. 56	35. 16. 17	36. 59. 33	38. 42. 45	40. 25. 53	42. 8. 55	43. 51. 49	45. 34. 36
	25	47. 17. 16	48. 59. 45	50. 42. 5	52. 24. 15	54. 6. 15	55. 48. 4	57. 29. 42	59. 11. 9
	26	60. 52. 25	62. 33. 29	64. 14. 22	65. 55. 4	67. 35. 34	69. 15. 52	70. 55. 59	72. 35. 54
	27	74. 15. 38	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Regulus.	27	37. 14. 37	38. 54. 21	40. 33. 55	42. 13. 19	43. 52. 33	45. 31. 36	47. 10. 28	48. 49. 10
	28	50. 27. 41	52. 6. 1	53. 44. 10	55. 22. 8	56. 59. 55	58. 37. 31	60. 14. 57	61. 52. 12
	29	63. 29. 16	65. 6. 9	66. 42. 51	68. 19. 23	69. 55. 44	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, *at Midnight.*

Day	West	○	East
1	·2	○	3· 1· .4○
2	3· ·1	○	·2 ·4
3	2.● 3·	○	1· ·4
4	.1○ ·3 2·	○	·4
5	.2○ 1·	○	·3 ·4
6		○	·1 2· ·3 4·
7	1· 2·	○	3· 4·
8	·2	○	1&3 4·
9	·1 3·	○	4· ·2
10.	3· 4·	○	1&2
11	4· ·3 2· ·1	○	
12	4·	○	.3○ .2○ 1.●
13	4·	○	·1 2· ·3
14	·4 1&2	○	3·
15	·4 ·2	○	·1 3·
16	·4 1&3	○	·2
17	3· ·4	○	1&2
18	·3 ·2 ·1	○	·4
19	2&3	○	1· ·4
20	.1○	○	2&3 ·4
21	1·2·	○	3· ·4
22	·2	○	·1 3· 4·
23	1· 3·	○	·2 4·
24	3·	○	1&2 4·
25	·3 2· ·1	○	4·
26	4& 2&3	○	1·
27	.1○ 4·	○	2&3
28.	4· 1·	○	·3 2.●
29	4· ·2	○	·1 3·
30	4· 1· 3·	○	·2

Days of the Week.	Days of the Month.	*Sundays, and other remarkable Days.*
M.	1	
Tu.	2	
W.	3	
Th.	4	
F.	5	
Sa.	6	Nicholas.
Sun.	7	*2d Sunday in Advent.*
M.	8	Conception of B.V.Mary.
Tu.	9	
W.	10	
Th.	11	
F.	12	
Sa.	13	Lucy.
Sun.	14	*3d Sunday in Advent.*
M.	15	
Tu.	16	Camb. Term ends. O. Sap.
W.	17	Oxford Term ends.
Th.	18	
F.	19	
Sa.	20	
Sun.	21	*4th Sunday in Advent.* [*St. Thomas.*
M.	22	
Tu.	23	
W.	24	
Th.	25	*Christmas Day.*
F.	26	*St. Stephen.*
Sa.	27	*St. John.*
Sun.	28	*1st Sun. after Christmas.* [*Innocents.*
M.	29	
Tu.	30	
W.	31	Silvester.

Phases of the MOON.

	D.	H.	M.
● New Moon	2.	1.	36
☽ *First Quarter* . .	10.	6.	56
○ Full Moon	17.	9.	50
☾ *Last Quarter* . . .	24.	1.	18
● New Moon	31.	20.	7

Other *Phenomena.*

D.	H.	M.	
1.	21.	6	☽ α ♏.
4.	13.	43	☽ ♅.
18.	5.	14	☽ ♃.
22.	2.	14	☉ enters ♑.
29.	3.	12	☽ α ♏.
31.	-	-	☉ ecl. invis.
31.	23.	26	☽ ♅.

Days of the Week.	Days of the Month.	THE SUN's Longitude.	Rt. Ascen. in Time.	Declin. South.	Diff.	Equation of Time. Sub. from app. Time.	Diff.
		S. D. M. S.	H. M. S.	D. M. S.	M. S	M. S.	S.
M.	1	8. 8. 32. 26	16. 27. 12, 8	21. 45. 2	9. 21	10. 54, 6	22, 8
Tu.	2	8. 9. 33. 21	16. 31. 32, 2	21. 54. 23	8. 55	10. 31, 8	23, 5
W.	3	8. 10. 34. 17	16. 35. 52, 3	22. 3. 18	8. 30	10. 8, 3	24, 0
Th.	4	8. 11. 35. 15	16. 40. 12, 9	22. 11. 48	8. 4	9. 44, 3	24, 5
F.	5	8. 12. 36. 13	16. 44. 34, 1	22. 19. 52	7. 38	9. 19, 8	25, 2
Sa.	6	8. 13. 37. 13	16. 48. 55, 9	22. 27. 30	7. 11	8. 54, 6	25, 7
Sun.	7	8. 14. 38. 13	16. 53. 18, 2	22. 34. 41	6. 45	8. 28, 9	26, 2
M.	8	8. 15. 39. 14	16. 57. 41, 0	22. 41. 26	6. 18	8. 2, 7	26, 6
Tu.	9	8. 16. 40. 15	17. 2. 4, 3	22. 47. 44	5. 51	7. 36, 1	27, 1
W.	10	8. 17. 41. 17	17. 6. 28, 0	22. 53. 35	5. 24	7. 9, 0	27, 4
Th.	11	8. 18. 42. 19	17. 10. 52, 1	22. 58. 59	4. 57	6. 41, 6	27, 8
F.	12	8. 19. 43. 22	17. 15. 16, 5	23. 3. 56	4. 29	6. 13, 8	28, 2
Sa.	13	8. 20. 44. 26	17. 19. 41, 3	23. 8. 25	4. 1	5. 45, 6	28, 5
Sun.	14	8. 21. 45. 29	17. 24. 6, 4	23. 12. 26	3. 34	5. 17, 1	28, 7
M.	15	8. 22. 46. 33	17. 28. 31, 8	23. 16. 0	3. 5	4. 48, 4	29, 1
Tu.	16	8. 23. 47. 38	17. 32. 57, 5	23. 19. 5	2. 38	4. 19, 3	29, 2
W.	17	8. 24. 48. 43	17. 37. 23, 4	23. 21. 43	2. 10	3. 50, 1	29, 4
Th.	18	8. 25. 49. 49	17. 41. 49, 4	23. 23. 53	1. 42	3. 20, 7	29, 6
F.	19	8. 26. 50. 55	17. 46. 15, 7	23. 25. 35	1. 13	2. 51, 1	29, 8
Sa.	20	8. 27. 52. 2	17. 50. 42, 1	23. 26. 48	0. 45	2. 21, 3	29, 8
Sun.	21	8. 28. 53. 10	17. 55. 8, 6	23. 27. 33	0. 17	1. 51, 5	30, 0
M.	22	8. 29. 54. 18	17. 59. 35, 2	23. 27. 50	0. 12	1. 21, 5	30, 0
Tu.	23	9. 0. 55. 27	18. 4. 1, 8	23. 27. 38	0. 40	0. 51, 5	30, 1
W.	24	9. 1. 56. 37	18. 8. 28, 5	23. 26. 58	1. 8	0. 21, 4	30, 0
Th.	25	9. 2. 57. 48	18. 12. 55, 2	23. 25. 50	1. 36	*Add.* 0. 8, 6	29, 9
F.	26	9. 3. 58. 59	18. 17. 21, 8	23. 24. 14	2. 5	0. 38, 5	29, 9
Sa.	27	9. 5. 0. 10	18. 21. 48, 3	23. 22. 9	2. 33	1. 8, 4	29, 8
Sun.	28	9. 6. 1. 22	18. 26. 14, 7	23. 19. 36	3. 1	1. 38, 2	29, 6
M.	29	9. 7. 2. 34	18. 30. 40, 9	23. 16. 35	3. 29	2. 7, 8	29, 4
Tu.	30	9. 8. 3. 47	18. 35. 6, 9	23. 13. 6	3. 58	2. 37, 2	29, 1
W.	31	9. 9. 5. 0	18. 39. 32, 8	23. 9. 8		3. 6, 3	

Days	Time of ⊙'s Semidiam. passing Merid.	The SUN's Semi-diameter.	The SUN's Hourly Motion.	The SUN's Logar. Distance.	Place of the ☽'s Node.
	M. S.	M. S.	M. S.		S. D. M.
1	1. 10, 0	16. 15, 4	2. 32, 2	9. 993721	9. 20. 36
7	1. 10, 5	16. 16, 2	2. 32, 4	9. 993352	9. 20. 17
13	1. 10, 8	16. 16, 9	2. 32, 6	9. 993044	9. 19. 58
19	1. 10, 9	16. 17, 4	2. 32, 8	9. 992825	9. 19. 39
25	1. 11, 0	16. 17, 7	2. 32, 9	9. 992709	9. 19. 20

ECLIPSES OF THE SATELLITES OF JUPITER.

MEAN TIME.

I. Satellite. Days.	Immersions. H. M. S.	II. Satellite. Days.	Immersions. H. M. S.	III. Satellite. Days.	H. M. S.
1	21. 32. 20	1	22. 21. 13	*7	9. 25. 10 Im.
*3	16. 0. 45	*5	11. 40. 16	*7	12. 27. 1 E.
*5	10. 29. 10	9	0. 58. 14	*14	13. 23. 55 Im.
7	4. 57. 36	*12	14. 17. 20	*14	16. 26. 39 E.
8	23. 26. 1	16	3. 35. 21	*21	17. 22. 38 Im.
*10	17. 54. 29	*19	16. 54. 28	21	20. 26. 13 E.
*12	12. 22. 55	*23	6. 12. 32	28	21. 21. 19 Im.
*14	6. 51. 23	26	19. 31. 40	29	0. 25. 46 E.
16	1. 19. 50		*Emersion.*		
17	19. 48. 19	*30	11. 34. 33		
*19	14. 16. 47				
*21	8. 45. 17				
23	3. 13. 46				
24	21. 42. 18				IV. Satellite.
*26	16. 10. 46			13	2. 2. 7 Im.
*28	10. 39. 18			13	3. 13. 54 E.
	Emersion.			29	19. 58. 26 Im.
*30	7. 19. 45			29	21. 32. 55 E.

THE PLANETS'

Days	Heliocentric Long.	Heliocentric Lat.	Geocentric Long.	Geocentric Lat.	Declin.	Rt. Asc. *in Time.*	Passage Merid.
	S. D. M.	D. M.	S. D. M.	D. M.	D. M.	H. M.	H. M.
☿			*MERCURY.*		Sup. ☌ 12ᵈ. 21½ʰ.		
1	7. 17. 31	0. 9 S	8. 1. 57	0. 3 S	20. 37 S	15. 59	23. 34
4	7. 26. 4	1. 12	8. 6. 39	0. 23	21. 49	16. 19	23. 41
7	8. 4. 25	2. 12	8. 11. 22	0. 42	22. 52	16. 39	23. 48
10	8. 12. 40	3. 8	8. 16. 5	1. 0	23. 44	16. 59	23. 55
13	8. 20. 55	4. 0	8. 20. 48	1. 17	24. 25	17. 20	0. 2
16	8. 29. 15	4. 47	8. 25. 32	1. 32	24. 55	17. 40	0. 7
19	9. 7. 46	5. 29	9. 0. 18	1. 45	25. 13	18. 1	0. 15
22	9. 16. 34	6. 5	9. 5. 5	1. 55	25. 18	18. 22	0. 23
25	9. 25. 44	6. 34	9. 9. 54	2. 3	25. 9	18. 44	0. 31
28	10. 5. 26	6. 53	9. 14. 46	2. 8	24. 46	19. 5	0. 39
31	10. 15. 46	7. 0	9. 19. 38	2. 9	24. 9	19. 26	0. 47
♀			*VENUS.*		Gr. Elong. 19ᵈ.		
1	3. 9. 40	1. 25 N	6. 23. 25	1. 56 N	7. 18 S	13. 30	21. 1
7	3. 19. 24	1. 55	6. 28. 33	2. 25	8. 43	13. 50	20. 56
13	3. 29. 9	2. 22	7. 4. 7	2. 46	10. 18	14. 11	20. 51
19	4. 8. 54	2. 44	7. 10. 0	2. 59	12. 0	14. 34	20. 48
25	4. 18. 39	3. 2	7. 16. 9	3. 6	13. 43	14. 58	20. 45
♂			*MARS.*		□ 21ᵈ. 5¾ʰ.		
1	4. 14. 1	1. 51 N	5. 19. 43	1. 59 N	5. 54 N	11. 25	18. 56
7	4. 16. 40	1. 51	5. 22. 39	2. 4	4. 49	11. 36	18. 41
13	4. 19. 18	1. 51	5. 25. 28	2. 10	3. 47	11. 47	18. 25
19	4. 21. 56	1. 51	5. 28. 10	2. 15	2. 48	11. 57	18. 8
25	4. 24. 34	1. 50	6. 0. 45	2. 21	1. 51	12. 6	17. 51
♃			*JUPITER.*		☍ 28ᵈ. 0¼ʰ.		
1	3. 3. 45	0. 7 S	3. 9. 22	0. 8 S	23. 0 N	6. 41	14. 11
7	3. 4. 16	0. 6	3. 8. 44	0. 7	23. 3	6. 38	13. 42
13	3. 4. 46	0. 5	3. 8. 1	0. 7	23. 7	6. 35	13. 12
19	3. 5. 16	0. 5	3. 7. 15	0. 6	23. 10	6. 32	12. 43
25	3. 5. 47	0. 4	3. 6. 26	0. 5	23. 14	6. 28	12. 13
♄			*SATURN.*				
1	1. 21. 3	2. 11 S	1. 18. 58	2. 26 S	15. 8 N	3. 9	10. 40
7	1. 21. 16	2. 11	1. 18. 32	2. 25	15. 2	3. 7	10. 12
13	1. 21. 29	2. 11	1. 18. 9	2. 24	14. 57	3. 5	9. 44
19	1. 21. 42	2. 10	1. 17. 48	2. 23	14. 52	3. 4	9. 16
25	1. 21. 55	2. 10	1. 17. 31	2. 21	14. 49	3. 3	8. 48
♅			*GEORGIAN.*				
1	9. 11. 19	0. 22 S	9. 9. 49	0. 21 S	23. 27 S	18. 43	2. 15
11	9. 11. 26	0. 22	9. 10. 22	0. 21	23. 25	18. 45	1. 34
21	9. 11. 32	0. 22	9. 10. 56	0. 21	23. 22	18. 48	0. 52
31	9. 11. 39	0. 22	9. 11. 32	0. 21	23. 19	18. 50	0. 11

Days of the Week.	Days of the Month.	The MOON's Longitude. Noon. S. D. M. S.	The MOON's Longitude. Midnight. S. D. M. S.	The MOON's Latitude. Noon. D. M. S.	The MOON's Latitude. Midnight. D. M. S.
M.	1	7. 26. 18. 56	8. 2. 35. 0	4. 7. 9 S	3. 45. 20 S
Tu.	2	8. 8. 47. 56	8. 14. 57. 48	3. 20. 57	2. 54. 24
W.	3	8. 21. 4. 43	8. 27. 8. 51	2. 26. 0	1. 56. 6
Th.	4	9. 3. 10. 23	9. 9. 9. 34	1. 25. 4	0. 53. 14 S
F.	5	9. 15. 6. 43	9. 21. 2. 12	0. 20. 58 S	0. 11. 24 N
Sa.	6	9. 26. 56. 25	10. 2. 49. 50	0. 43. 34 N	1. 15. 14
Sun.	7	10. 8. 42. 56	10. 14. 36. 15	1. 46. 6	2. 15. 52
M.	8	10. 20. 30. 23	10. 26. 25. 55	2. 44. 16	3. 11. 1
Tu.	9	11. 2. 23. 28	11. 8. 23. 41	3. 35. 52	3. 58. 33
W.	10	11. 14. 27. 12	11. 20. 34. 39	4. 18. 47	4. 36. 16
Th.	11	11. 26. 46. 39	0. 3. 3. 47	4. 50. 46	5. 2. 0
F.	12	0. 9. 26. 35	0. 15. 55. 30	5. 9. 41	5. 13. 35
Sa.	13	0. 22. 30. 53	0. 29. 13. 1	5. 13. 27	5. 9. 4
Sun.	14	1. 6. 2. 1	1. 12. 57. 53	5. 0. 16	4. 46. 57
M.	15	1. 20. 0. 25	1. 27. 9. 16	4. 29. 8	4. 6. 52
Tu.	16	2. 4. 23. 55	2. 11. 43. 39	3. 40. 20	3. 9. 52
W.	17	2. 19. 7. 38	2. 26. 34. 54	2. 35. 54	1. 59. 0
Th.	18	3. 4. 4. 24	3. 11. 35. 3	1. 19. 50 N	0. 39. 9 N
F.	19	3. 19. 5. 44	3. 26. 35. 25	0. 2. 15 S	0. 43. 33 S
Sa.	20	4. 4. 3. 6	4. 11. 27. 56	1. 23. 56	2. 2. 39
Sun.	21	4. 18. 49. 8	4. 26. 6. 5	2. 39. 1	3. 12. 27
M.	22	5. 3. 18. 20	5. 10. 25. 33	3. 42. 27	4. 8. 39
Tu.	23	5. 17. 27. 32	5. 24. 24. 12	4. 30. 45	4. 48. 35
W.	24	6. 1. 15. 34	6. 8. 1. 43	5. 2. 2	5. 11. 6
Th.	25	6. 14. 42. 49	6. 21. 19. 4	5. 15. 49	5. 16. 16
F.	26	6. 27. 50. 44	7. 4. 18. 6	5. 12. 37	5. 5. 2
Sa.	27	7. 10. 41. 25	7. 17. 1. 0	4. 53. 43	4. 38. 55
Sun.	28	7. 23. 17. 8	7. 29. 30. 3	4. 20. 54	3. 59. 56
M.	29	8. 5. 40. 4	8. 11. 47. 23	3. 36. 19	3. 10. 22
Tu.	30	8. 17. 52. 15	8. 23. 54. 55	2. 42. 25	2. 12. 48
W.	31	8. 29. 55. 35	9. 5. 54. 29	1. 41. 51	1. 9. 54

Days of the Month.	Age.	Pass. Mer.	THE MOON's Right Ascension. Noon.	Right Ascension. Midnight.	Declination. Noon.	Declination. Midnight.
	D.	H. M.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
1	30	23. 54	232. 56. 54	239. 42. 19	23. 21. 3 S	24. 22. 45 S
2	1	6	246. 30. 18	253. 19. 1	25. 5. 56	25. 30. 11
3	2	0. 46	260. 6. 29	266. 50. 41	25. 35. 28	25. 22. 4
4	3	1. 37	273. 29. 45	280. 2. 10	24. 50. 35	24. 1. 56
5	4	2. 26	286. 26. 48	292. 42. 55	22. 57. 14	21. 37. 43
6	5	3. 12	298. 50. 18	304. 49. 8	20. 4. 43	18. 19. 34
7	6	3. 56	310. 39. 57	316. 23. 37	16. 23. 35	14. 18. 5
8	7	4. 38	322. 1. 18	327. 34. 19	12. 4. 17	9. 43. 21
9	8	5. 19	333. 4. 11	338. 32. 33	7. 16. 24	4. 44. 29 S
10	9	6. 0	344. 1. 12	349. 32. 0	2. 8. 43 S	0. 29. 47 N
11	10	6. 41	355. 6. 56	0. 48. 1	3. 9. 50 N	5. 50. 8
12	11	7. 25	6. 37. 22	12. 37. 6	8. 29. 13	11. 5. 25
13	12	8. 12	18. 49. 15	25. 15. 45	13. 36. 47	16. 1. 3
14	13	9. 3	31. 58. 17	38. 58. 1	18. 15. 42	20. 17. 54
15	14	10. 0	46. 15. 26	53. 50. 7	22. 4. 38	23. 32. 43
16	15	11. 1	61. 46. 32	69. 43. 54	24. 39. 5	25. 21. 2
17	16	12. 5	77. 56. 19	86. 13. 3	25. 36. 28	25. 24. 9
18	17	13. 9	94. 29. 3	102. 39. 29	24. 43. 52	23. 36. 30
19	18	14. 10	110. 40. 15	118. 28. 21	22. 3. 55	20. 8. 45
20	19	15. 7	126. 2. 1	133. 20. 38	17. 54. 11	15. 23. 40
21	20	16. 0	140. 24. 33	147. 14. 54	12. 40. 43	9. 48. 41
22	21	16. 49	153. 53. 21	160. 21. 50	6. 50. 42	3. 49. 40 N
23	22	17. 36	166. 42. 28	172. 57. 24	0. 48. 11 N	2. 11. 25 S
24	23	18. 22	179. 8. 44	185. 18. 27	5. 7. 5 S	7. 56. 55
25	24	19. 9	191. 28. 22	197. 40. 7	10. 39. 10	13. 12. 13
26	25	19. 57	203. 55. 4	210. 14. 17	15. 34. 34	17. 44. 45
27	26	20. 46	216. 38. 26	223. 7. 50	19. 41. 23	21. 23. 14
28	27	21. 37	229. 42. 18	236. 21. 13	22. 49. 7	23. 58. 2
29	28	22. 28	243. 3. 35	249. 47. 55	24. 49. 12	25. 22. 3
30	29	23. 19	256. 32. 30	263. 15. 31	25. 36. 19	25. 32. 5
31	1	6	269. 55. 8	276. 29. 36	25. 9. 41	24. 29. 45

Days of the Week.	Days of the Month.	THE MOON's Semidiameter. Noon. M. S.	Semidiameter. Midnight. M. S.	Hor. Parallax. Noon. M. S.	Hor. Parallax. Midnight. M. S.	Proportional Logarithm. Noon.	Proportional Logarithm. Midn.
M.	1	15. 8	15. 4	55. 32	55. 19	5107	5124
Tu.	2	15. 1	14. 58	55. 6	54. 54	5141	5157
W.	3	14. 55	14. 52	54. 43	54. 33	5172	5185
Th.	4	14. 49	14. 47	54. 24	54. 16	5197	5207
F.	5	14. 45	14. 44	54. 10	54. 5	5215	5222
Sa.	6	14. 43	14. 43	54. 2	54. 0	5226	5229
Sun.	7	14. 43	14. 44	54. 1	54. 4	5227	5223
M.	8	14. 46	14. 48	54. 9	54. 17	5217	5206
Tu.	9	14. 51	14. 54	54. 28	54. 41	5191	5174
W.	10	14. 58	15. 3	54. 56	55. 14	5154	5131
Th.	11	15. 9	15. 15	55. 34	55. 57	5105	5075
F.	12	15. 22	15. 29	56. 22	56. 48	5043	5009
Sa.	13	15. 36	15. 44	57. 16	57. 44	4974	4938
Sun.	14	15. 52	15. 59	58. 13	58. 41	4902	4868
M.	15	16. 7	16. 14	59. 8	59. 34	4834	4803
Tu.	16	16. 20	16. 26	59. 57	60. 18	4775	4750
W.	17	16. 30	16. 34	60. 34	60. 47	4730	4715
Th.	18	16. 36	16. 37	60. 55	60. 59	4705	4701
F.	19	16. 37	16. 36	60. 59	60. 54	4701	4707
Sa.	20	16. 33	16. 30	60. 45	60. 32	4717	4733
Sun.	21	16. 25	16. 20	60. 16	59. 57	4752	4775
M.	22	16. 14	16. 8	59. 36	59. 14	4800	4827
Tu.	23	16. 2	15. 56	58. 51	58. 27	4855	4885
W.	24	15. 49	15. 43	58. 3	57. 40	4915	4943
Th.	25	15. 37	15. 31	57. 18	56. 56	4971	4999
F.	26	15. 25	15. 20	56. 35	56. 16	5026	5050
Sa.	27	15. 15	15. 10	55. 58	55. 41	5073	5095
Sun.	28	15. 6	15. 2	55. 26	55. 12	5115	5133
M.	29	14. 59	14. 56	54. 59	54. 47	5150	5166
Tu.	30	14. 53	14. 50	54. 36	54. 27	5181	5193
W.	31	14. 48	14. 46	54. 19	54. 12	5203	5213

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *EAST* of her.

Stars' Names.	Days	*Noon.*	III^h.	VI^h.	IX^h.	*Midnight.*	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
Fomalhaut.	4	59. 59. 12	58. 40. 9	57. 21. 33	56. 3. 24	54. 45. 46	53. 28. 40	52. 12. 8	50. 56. 13
	5	49. 40. 56	48. 26. 20	47. 12. 27	45. 59. 18	44. 46. 57	- - -	- - -	- - -
α Pegasi.	5	- - -	- - -	- - -	- - -	61. 47. 38	60. 22. 30	58. 57. 32	57. 32. 46
	6	56. 8. 10	54. 43. 46	53. 19. 35	51. 55. 37	50. 31. 52	49. 8. 19	47. 45. 3	46. 22. 2
	7	44. 59. 18	43. 36. 51	42. 14. 45	40. 52. 59	39. 31. 33	- - -	- - -	- - -
α Arietis.	7	- - -	- - -	- - -	- - -	80. 21. 30	78. 53. 11	77. 24. 50	75. 56. 25
	8	74. 27. 58	72. 59. 26	71. 30. 50	70. 2. 8	68. 33. 22	67. 4. 30	65. 35. 30	64. 6. 24
	9	62. 37. 11	61. 7. 49	59. 38. 19	58. 8. 39	56. 38. 50	55. 8. 51	53. 38. 41	52. 8. 19
	10	50. 37. 47	49. 7. 2	47. 36. 4	46. 4. 54	44. 33. 31	43. 1. 54	41. 30. 3	39. 57. 58
	11	38. 25. 39	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Aldebaran.	11	71. 12. 49	69. 40. 37	68. 8. 7	66. 35. 20	65. 2. 15	63. 28. 52	61. 55. 10	60. 21. 10
	12	58. 46. 52	57. 12. 14	55. 37. 18	54. 2. 3	52. 26. 29	50. 50. 35	49. 14. 24	47. 37. 55
	13	46. 1. 9	44. 24. 3	42. 46. 43	41. 9. 9	39. 31. 20	37. 53. 19	36. 15. 8	34. 36. 47
	14	32. 58. 16	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Pollux.	14	74. 19. 26	72. 37. 15	70. 54. 39	69. 11. 37	67. 28. 10	65. 44. 18	64. 0. 2	62. 15. 23
	15	60. 30. 20	58. 44. 54	56. 59. 6	55. 12. 57	53. 26. 27	51. 39. 36	49. 52. 27	48. 5. 1
	16	46. 17. 18	44. 29. 19	42. 41. 6	40. 52. 43	39. 4. 10	37. 15. 29	35. 26. 42	33. 37. 52
	17	31. 48. 59	- - -	- - -	- - -	- - -	- - -	- - -	- - -

Stars' Names.	Days	Noon. D. M. S.	III^h. D. M. S.	VI^h. D. M. S.	IX^h. D. M. S.	Midnight. D. M. S.	XV^h. D. M. S.	XVIII^h. D. M. S.	XXI^h. D. M. S.
Regulus.	17	68. 15. 47	66. 24. 15	64. 32. 32	62. 40. 38	60. 48. 32	58. 56. 17	57. 3. 55	55. 11. 27
	18	53. 18. 53	51. 26. 14	49. 33. 34	47. 40. 52	45. 48. 9	43. 55. 27	42. 2. 49	40. 10. 15
	19	38. 17. 45	36. 25. 22	34. 33. 8	32. 41. 5	30. 49. 14	28. 57. 38	27. 6. 17	25. 15. 15
	20	23. 24. 33	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	20	77. 17. 47	75. 26. 3	73. 34. 32	71. 43. 16	69. 52. 14	68. 1. 27	66. 10. 56	64. 20. 42
	21	62. 30. 45	60. 41. 6	58. 51. 47	57. 2. 45	55. 14. 3	53. 25. 41	51. 37. 40	49. 50. 0
	22	48. 2. 40	46. 15. 42	44. 29. 6	42. 42. 53	40. 57. 2	39. 11. 34	37. 26. 29	35. 41. 48
	23	33. 57. 30	32. 13. 36	30. 30. 7	28. 47. 4	27. 4. 26	25. 22. 15	23. 40. 32	21. 59. 17
	24	20. 18. 31	- - -	- - -	- - -	- - -	- - -	- - -	- - -
The Sun.	21	- - -	- - -	- - -	- - -	- - -	121. 33. 11	119. 52. 34	118. 12. 18
	22	116. 32. 22	114. 52. 46	113. 13. 31	111. 34. 37	109. 56. 3	108. 17. 51	106. 40. 0	105. 2. 30
	23	103. 25. 22	101. 48. 35	100. 12. 9	98. 36. 4	97. 0. 20	95. 24. 57	93. 49. 56	92. 15. 14
	24	90. 40. 54	89. 6. 53	87. 33. 13	85. 59. 52	84. 26. 51	82. 54. 10	81. 21. 48	79. 49. 44
	25	78. 18. 0	76. 46. 33	75. 15. 25	73. 44. 33	72. 14. 0	70. 43. 43	69. 13. 43	67. 43. 59
	26	66. 14. 32	64. 45. 20	63. 16. 22	61. 47. 40	60. 19. 13	58. 51. 0	57. 23. 1	55. 55. 16
	27	54. 27. 45	53. 0. 27	51. 33. 21	50. 6. 27	48. 39. 46	47. 13. 16	45. 46. 58	44. 20. 51
	28	42. 54. 55	41. 29. 10	40. 3. 36	- - -	- - -	- - -	- - -	- - -

DISTANCES of the MOON'S *Centre* from the SUN, and from STARS *WEST* of her.

Stars' Names.	Days	Noon. D. M. S.	IIIʰ. D. M. S.	VIʰ. D. M. S.	IXʰ. D. M. S.	*Midnight.* D. M. S.	XVʰ. D. M. S.	XVIIIʰ. D. M. S.	XXIʰ. D. M. S.
The Sun.	5	- - -	- - -	- - -	- - -	- - -	39. 16. 34	40. 37. 36	41. 58. 35
	6	43. 19. 30	44. 40. 22	46. 1. 13	47. 22. 2	48. 42. 50	50. 3. 36	51. 24. 22	52. 45. 8
	7	54. 5. 54	55. 26. 40	56. 47. 27	58. 8. 16	59. 29. 7	60. 50. 0	62. 10. 56	63. 31. 56
	8	64. 53. 0	66. 14. 8	67. 35. 21	68. 56. 40	70. 18. 5	71. 39. 36	73. 1. 15	74. 23. 1
	9	75. 44. 56	77. 7. 0	78. 29. 14	79. 51. 38	81. 14. 12	82. 36. 57	83. 59. 55	85. 23. 5
	10	86. 46. 28	88. 10. 4	89. 33. 56	90. 58. 2	92. 22. 28	93. 47. 0	95. 11. 53	96. 37. 6
	11	98. 2. 35	99. 28. 22	100. 54. 29	102. 20. 55	103. 47. 41	105. 14. 47	106. 42. 14	108. 10. 3
	12	109. 38. 13	111. 6. 46	112 35. 42	114. 5. 1	115. 34. 44	117. 4. 50	118. 35. 21	120. 6. 17
α Aquilæ.	10	- - -	- - -	- - -	- - -	54. 20. 44	55. 36. 5	56. 52. 12	58. 9. 4
	11	59. 26. 41	60. 45. 0	62. 4. 0	63. 23. 40	64. 44. 1	66. 4. 58	67. 26. 31	68. 48. 40
	12	70. 11. 25	71. 34. 44	72. 58. 35	74. 22. 58	75. 47. 54	- - -	- - -	- - -
Fomalhaut.	12	- - -	- - -	- - -	- - -	50. 59. 57	52. 22. 54	53. 46. 47	55. 11. 33
	13	56. 37. 11	58. 3. 39	59. 30. 56	60. 59. 1	62. 27. 50	63. 57. 23	65. 27. 36	66. 58. 31
	14	68. 30. 7	70. 2. 21	71. 35. 11	73. 8. 36	74. 42. 37	- - -	- - -	- - -
α Pegasi.	14	- - -	- - -	- - -	- - -	52. 36. 19	54. 15. 39	55. 55. 36	57. 36. 11
	15	59. 17. 21	60. 59. 6	62. 41. 23	64. 24. 12	66. 7. 33	67. 51. 23	69. 35. 41	71. 20. 26
	16	73. 5. 37	74. 51. 13	76. 37. 12	78. 23. 33	80. 10. 16	- - -	- - -	- - -

Stars' Names.	Days	Noon.	III^h.	VI^h.	IX^h.	Midnight.	XV^h.	XVIII^h.	XXI^h.
		D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.	D. M. S.
α Arietis.	16	- - -	- - -	- - -	- - -	36. 52. 48	38. 42. 30	40. 32. 32	42. 22. 54
	17	44. 13. 36	46. 4. 35	47. 55. 49	49. 47. 17	51. 39. 0	53. 30. 54	55. 22. 58	57. 15. 11
	18	59. 7. 33	61. 0. 1	62. 52. 34	64. 45. 10	66. 37. 51	68. 30. 32	70. 23. 14	72. 15. 54
	19	74. 8. 33	76. 1. 8	77. 53. 39	79. 46. 4	81. 38. 23	- - -	- - -	- - -
Aldebaran.	19	- - -	- - -	- - -	- - -	49. 23. 23	51. 13. 41	53. 3. 55	54. 54. 5
	20	56. 44. 12	58. 34. 12	60. 24. 3	62. 13. 45	64. 3. 18	65. 52. 38	67. 41. 45	69. 30. 39
	21	71. 19. 19	73. 7. 44	74. 55. 51	76. 43. 41	78. 31. 14	- - -	- - -	- - -
Pollux.	21	- - -	- - -	- - -	- - -	36. 36. 12	38. 22. 46	40. 9. 7	41. 55. 17
	22	43. 41. 14	45. 26. 57	47. 12. 25	48. 57. 37	50. 42. 34	52. 27. 12	54. 11. 33	55. 55. 36
	23	57. 39. 21	59. 22. 46	61. 5. 53	62. 48. 40	64. 31. 9	66. 13. 18	67. 55. 7	69. 36. 38
	24	71. 17. 49	72. 58. 41	74. 39. 14	76. 19. 27	77. 59. 22	- - -	- - -	- - -
Regulus.	24	- - -	- - -	- - -	- - -	40. 58. 37	42. 38. 28	44. 18. 3	45. 57. 19
	25	47. 36. 19	49. 15. 1	50. 53. 27	52. 31. 36	54. 9. 29	55. 47. 5	57. 24. 26	59. 1. 31
	26	60. 38. 20	62. 14. 54	63. 51. 14	65. 27. 20	67. 3. 11	68. 38. 48	70. 14. 11	71. 49. 21
	27	73. 24. 17	- - -	- - -	- - -	- - -	- - -	- - -	- - -
Spica ♍.	27	19. 28. 31	21. 2. 14	22. 35. 52	24. 9. 26	25. 42. 54	27. 16. 16	28. 49. 32	30. 22. 40
	28	31. 55. 42	33. 28. 36	35. 1. 21	36. 33. 57	38. 6. 24	- - -	- - -	- - -

CONFIGURATIONS of the SATELLITES of JUPITER, at X o'Clock in the *Evening*.

Day	West	Jupiter	East
1	·4. 3·	O	·1 2·
2	·4 ·3 1☌2	O	
3	·4 2☌3	O	1·
4	·1·4	O	·3 ·2
5		O	1·2· ·4 ·3
6	2·	O	3· ·4 .1O
7	.2O 3.● 1·	O	·4
8	3·	O	·1 2· ·4
9	·3 1·2·	O	4·
10	·3·2	O	1· 4·
11	·1	O	·3 ·2 4·
12		O	1·2·4· ·3
13	.1O ·2 4·	O	3·
14	.2O 4· 1·	O	3·
15	4· 3·	O	·1 2·
16	4· 3· 1·2·	O	
17	·4 ·3·2	O	·1
18	·4 ·1	O	·3 ·2
19	·4	O	1·2· 3·
20	2☌4 ·1	O	3·
21	·2	O	·4 3· 1.●
22	3·	O	·1 ·2 ·4
23	3· ·1 2·	O	·4
24	·3 ·2	O	·1 ·4
25	.3O ·1	O	·2 4·
26		O	1·2· ·3 4·
27	2· ·1	O	3· 4·
28	1.● ·2	O	3· 4·
29	3·	O	4· ·2 .1O
30	·3 4· 1:	O	2.●
31	4· ·3 ·2	O	·1

A TABLE

OF

ATMOSPHERICAL REFRACTIONS

WITH CORRECTIONS

FOR THE HEIGHT OF

THE BAROMETER AND THERMOMETER,

A TABLE

OF

SECOND DIFFERENCES,

AND

THE TRUE PLACES

OF

TWENTY FOUR PRINCIPAL STARS,

FOR 1823.

TABLE OF REFRACTIONS.

App. Altitude.	Refr. B. 30 Th. 50°	Diff. for 1′ Alt.	Diff. for +1 B.	Diff. for −1° Fa.	App. Altitude.	Refr. B. 30 Th. 50°	Diff. for 1′ Alt.	Diff. for +1 B.	Diff. for −1° Fa.
D. M.	M. S.	S.	S.	S.	D. M.	M. S.	S.	S.	S.
0. 0	33.51	11,7	74	8,1	4. 0	11.52	2,2	24,1	1,70
5	32.53	11,3	71	7,6	10	11.30	2,1	23,4	1,64
10	31.58	10,9	69	7,3	20	11.10	2,0	22,7	1,58
15	31. 5	10,5	67	7,0	30	10.50	1,9	22,0	1,53
20	30.13	10,1	65	6,7	40	10.32	1,8	21,3	1,48
25	29.24	9,7	63	6,4	50	10.15	1,7	20,7	1,43
30	28.37	9,4	61	6,1	5. 0	9.58	1,6	20,1	1,38
35	27.51	9,0	59	5,9	10	9.42	1,5	19,6	1,34
40	27. 6	8,7	58	5,6	20	9.27	1,5	19,1	1,30
45	26.24	8,4	56	5,4	30	9.11	1,4	18,6	1,26
50	25.43	8,0	55	5,1	40	8.58	1,3	18,1	1,22
55	25. 3	7,7	53	4,9	50	8.45	1,3	17,6	1,19
1. 0	24.25	7,4	52	4,7	6. 0	8.32	1,2	17,2	1,15
5	23.48	7,1	50	4,6	10	8.20	1,2	16,8	1,11
10	23.13	6,9	49	4,5	20	8. 9	1,1	16,4	1,09
15	22.40	6,6	48	4,4	30	7.58	1,1	16,0	1,06
20	22. 8	6,3	46	4,2	40	7.47	1,0	15,7	1,03
25	21.37	6,1	45	4,0	50	7.37	1,0	15,3	1,00
30	21. 7	5,9	44	3,9	7. 0	7.27	1,0	15,0	,98
35	20.38	5,7	43	3,8	10	7.17	,9	14,6	,95
40	20.10	5,5	42	3,6	20	7. 8	,9	14,3	,93
45	19.43	5,3	40	3,5	30	6.59	,8	14,1	,91
50	19.17	5,1	39	3,4	40	6.51	,8	13,8	,89
55	18.52	4,9	39	3,3	50	6.43	,8	13,5	,87
2. 0	18.29	4,8	38	3,2	8. 0	6.35	,7	13,3	,85
5	18. 5	4,6	37	3,1	10	6.28	,7	13,1	,83
10	17.43	4,4	36	3,0	20	6.21	,7	12,8	,82
15	17.21	4,3	36	2,9	30	6.14	,7	12,6	,80
20	17. 0	4,1	35	2,8	40	6. 7	,7	12,3	,79
25	16.40	4,0	34	2,8	50	6. 0	,6	12,1	,77
30	16.21	3,9	33	2,7	9. 0	5.54	,6	11,9	,76
35	16. 2	3,7	33	2,7	10	5.47	,6	11,7	,74
40	15.43	3,6	32	2,6	20	5.41	,6	11,5	,73
45	15.25	3,5	32	2,5	30	5.36	,6	11,3	,71
50	15. 8	3,4	31	2,4	40	5.30	,5	11,1	,71
55	14.51	3,3	30	2,3	50	5.25	,5	11,0	,70
3. 0	14.35	3,2	30	2,3	10. 0	5.20	,5	10,8	,69
5	14.19	3,1	29	2,2	10	5.15	,5	10,6	,67
10	14. 4	3,0	29	2,2	20	5.10	,5	10,4	,65
15	13.50	2,9	28	2,1	30	5. 5	,5	10,2	,64
20	13.35	2,8	28	2,1	40	5. 0	,5	10,1	,63
25	13.21	2,7	27	2,0	50	4.56	,4	9,9	,62
30	13. 7	2,7	27	2,0	11. 0	4.51	,4	9,8	,60
35	12.53	2,6	26	2,0	10	4.47	,4	9,6	,59
40	12.41	2,5	26	1,9	20	4.43	,4	9,5	,58
45	12.28	2,4	25	1,9	30	4.39	,4	9,4	,57
50	12.16	2,4	25	1,9	40	4.35	,4	9,2	,56
55	12. 3	2,3	25	1,8	50	4.31	,4	9,1	,55

TABLE OF REFRACTIONS.

App. Altitude.	Refr. B. 30 Th. 50°	Diff. for 1′ Alt.	Diff. for +1 B.	Diff. for −1° Fa.
D. M.	M. S.	S.	S.	S.
12. 0	4. 28,1	,38	9,00	,556
10	4. 24,4	,37	8,86	,548
20	4. 20,8	,36	8,74	,541
30	4. 17,3	,35	8,63	,533
40	4. 13,9	,33	8,51	,524
50	4. 10,7	,32	8,41	,517
13. 0	4. 7,5	,31	8,30	,509
10	4. 4,4	,31	8,20	,503
20	4. 1,4	,30	8,10	,496
30	3. 58,4	,30	8,00	,490
40	3. 55,5	,29	7,89	,482
50	3. 52,6	,29	7,79	,476
14. 0	3. 49,9	,28	7,70	,469
10	3. 47,1	,28	7,61	,464
20	3. 44,4	,27	7,52	,458
30	3. 41,8	,26	7,43	,453
40	3. 39,2	,26	7,34	,448
50	3. 36,7	,25	7,26	,444
15. 0	3. 34,3	,24	7,18	,439
30	3. 27,3	,22	6,95	,424
16. 0	3. 20,6	,21	6,73	,411
30	3. 14,4	,20	6,51	,399
17. 0	3. 8,5	,19	6,31	,386
30	3. 2,9	,18	6,12	,374
18. 0	2. 57,6	,17	5,98	,362
19. 0	2. 47,7	,16	5,61	,340
20	2. 38,7	,15	5,31	,322
21	2. 30,5	,13	5,04	,305
22	2. 23,2	,12	4,79	,290
23	2. 16,5	,11	4,57	,276
24	2. 10,1	,10	4,35	,264
25	2. 4,2	,09	4,16	,252
26	1. 58,8	,09	3,97	,241
27	1. 53,8	,08	3,81	,230
28	1. 49,1	,08	3,65	,219
29	1. 44,7	,07	3,50	,209
30	1. 40,5	,07	3,36	,201
31	1. 36,6	,06	3,23	,193
32	1. 33,0	,06	3,11	,186
33	1. 29,5	,06	2,99	,179
34	1. 26,1	,05	2,88	,173
35	1. 23,0	,05	2,78	,167
36	1. 20,0	,05	2,68	,161
37	1. 17,1	,05	2,58	,155
38	1. 14,4	,05	2,49	,149
39	1. 11,8	,04	2,40	,144
40	1. 9,3	,04	2,32	,139
41	1. 6,9	,04	2,24	,134

App. Altitude.	Refr. B. 30 Th. 50°	Diff. for 1′ Alt.	Diff. for +1 B.	Diff. for −1° Fa.
D.	M. S.	S.	S.	S.
42	1. 4,6	,038	2,16	,130
43	1. 2,4	,036	2,09	,125
44	1. 0,3	,034	2,02	,120
45	58,1	,034	1,94	,117
46	56,1	,033	1,88	,112
47	54,2	,032	1,81	,108
48	52,3	,031	1,75	,104
49	50,5	,030	1,69	,101
50	48,8	,029	1,63	,097
51	47,1	,028	1,58	,094
52	45,4	,027	1,52	,090
53	43,8	,026	1,47	,088
54	42,2	,026	1,41	,085
55	40,8	,025	1,36	,082
56	39,3	,025	1,31	,079
57	37,8	,025	1,26	,076
58	36,4	,024	1,22	,073
59	35,0	,024	1,17	,070
60	33,6	,023	1,12	,067
61	32,3	,022	1,08	,065
62	31,0	,022	1,04	,062
63	29,7	,021	,99	,060
64	28,4	,021	,95	,057
65	27,2	,020	,91	,055
66	25,9	,020	,87	,052
67	24,7	,020	,83	,050
68	23,5	,020	,79	,047
69	22,4	,020	,75	,045
70	21,2	,020	,71	,043
71	19,9	,020	,67	,040
72	18,8	,019	,63	,038
73	17,7	,018	,59	,036
74	16,6	,018	,56	,033
75	15,5	,018	,52	,031
76	14,4	,018	,48	,029
77	13,4	,017	,45	,027
78	12,3	,017	,41	,025
79	11,2	,017	,38	,023
80	10,2	,017	,34	,021
81	9,2	,017	,31	,018
82	8,2	,017	,27	,016
83	7,1	,017	,24	,014
84	6,1	,017	,20	,012
85	5,1	,017	,17	,010
86	4,1	,017	,14	,008
87	3,1	,017	,10	,006
88	2,0	,017	,07	,004
89	1,0	,017	,03	,002

Explanation of the Table of Refractions.

THIS Table is computed upon principles explained by Dr. YOUNG in the Philosophical Transactions for 1819; and it appears to agree more perfectly with the latest observations than any other table that has been published. The formula employed is

$$.0002825 = v\frac{r}{s} + (2.47 + .5\,v^2)\,\frac{r^2}{s^2} + 3600\,v\frac{r^3}{s^3} + 3600\;(1.235 + .25\,v^2)\;\frac{r^4}{s^4}\,;\; r$$

being the refraction, v the sine of the altitude, and s the cosine.

The apparent altitude being found in the first column, the second shows the refraction when the barometer stands at 30 inches, which is its mean height on the level of the sea, and the thermometer at 50° of Fahrenheit. The third column contains the difference to be subtracted or added for every minute of altitude, reckoned from the nearest number in the first column. The fourth shows the number of seconds to be added for every inch that the height of the barometer exceeds 30, or to be subtracted for each inch that it wants of 30: and the last contains the number of seconds to be subtracted for each degree that the thermometer stands above 50°, or to be added for each degree that its height wants of 50°.

If great accuracy be required, we must also deduct from the observed height of the barometer .003 *i.* for each degree that the thermometer near it is above 50°, and add an equal quantity for an equal depression. In fact, however, the table, as it now stands, is found to require the temperature to be estimated from the height of the thermometer within; and if we employed the height of the thermometer without, which would be more consistent with the theory, it would probably be necessary to suppose the standard temperature of the table 48° only, instead of 50°.

EXAMPLES.

1. At 7°. 18′. 13″ Bar. 29.87 Ther. 66°, the Refr. is 6′. 52″,26, from 22 obs. of Bradley.
2. At 19°. 18′. 19″ Bar. 30.045 Ther. 34°, the Refr. is 2′. 51″, 5, from 3 obs. of Bradley.
3. At 13°. 43′. Bar. 29.85 Ther. 45°, the Refr. is 3′. 55″,85, from 156 obs. of Mr. Pond.

1. Alt. 7°. 20′ R. 7′. 8″	Diff. Alt. ″,9	B. 14″,3	Th. ″,93
+ 1,62	1′. 47″ = 1′. 8	− .13	−16
7. 9,62	+1, 62	1,86	14,88
16,74			1,86
6 .52,88			16,74
6 .52,26			
Error 0,62			

2. Alt. 19° R. 2′. 47″,7	Diff. Alt. ″,16	B. 5″,61	Th. ″,34
− 2,93	18′. 19″ = 18. 3	+.045	+ 16
2. 44,77	−2,93	,252	5,44
,25			
5,44			
Error 1″,0 2. 50,46			

3. Alt. 13°. 40′ R. 3′. 55″,5	Diff. Alt. ″,29	B. 7″,89	Th. ″,482
+ ,36	3	. 15	5
3. 55, 86	−,87	−1, 18	+2,41
3. 55, 85		,87	2,05
Error .... ,01		2. 05	+ .36

A TABLE OF THE

EQUATION OF SECOND DIFFERENCES.

Hours after Noon or Midnight.		Second differences taken for intervals of 12 hours.										
		0 Minute					1 Minute					
		10″	20″	30″	40″	50″	0″	10″	20″	30″	40″	50″
H.M.	H.M.	″	″	″	″	″	″	″	″	″	″	″
0. 0	12. 0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0. 10	11. 50	0,1	0,1	0,2	0,3	0,3	0,4	0,5	0,5	0,6	0,7	0,8
0. 20	11. 40	0,1	0,3	0,4	0,5	0,7	0,8	0,9	1,1	1,2	1,4	1,5
0. 30	11. 30	0,2	0,4	0,6	0,8	1,0	1,2	1,4	1,6	1,8	2,0	2,2
0. 40	11. 20	0,3	0,5	0,8	1,0	1,3	1,6	1,8	2,1	2,4	2,6	2,9
0. 50	11. 10	0,3	0,6	1,0	1,3	1,6	1,9	2,3	2,6	2,9	3,2	3,6
1. 0	11. 0	0,4	0,8	1,1	1,5	1,9	2,3	2,7	3,1	3,4	3,8	4,2
1. 10	10. 50	0,4	0,9	1,3	1,8	2,2	2,6	3,1	3,5	3,9	4,4	4,8
1. 20	10. 40	0,5	1,0	1,5	2,0	2,5	3,0	3,5	4,0	4,4	4,9	5,4
1. 30	10. 30	0,5	1,1	1,6	2,2	2,7	3,3	3,8	4,4	4,9	5,5	6,0
1. 40	10. 20	0,6	1,2	1,8	2,4	3,0	3,6	4,2	4,8	5,4	6,0	6,6
1. 50	10. 10	0,6	1,3	1,9	2,6	3,2	3,9	4,5	5,2	5,8	6,5	7,1
2. 0	10. 0	0,7	1,4	2,1	2,8	3,5	4,2	4,9	5,6	6,3	6,9	7,6
2. 10	9. 50	0,7	1,5	2,2	3,0	3,7	4,4	5,2	5,9	6,7	7,4	8,1
2. 20	9. 40	0,8	1,6	2,3	3,1	3,9	4,7	5,5	6,3	7,0	7,8	8,6
2. 30	9. 30	0,8	1,6	2,5	3,3	4,1	4,9	5,8	6,6	7,4	8,2	9,1
2. 40	9. 20	0,9	1,7	2,6	3,5	4,3	5,2	6,0	6,9	7,8	8,6	9,5
2. 50	9. 10	0,9	1,8	2,7	3,6	4,5	5,4	6,3	7,2	8,1	9,0	9,9
3. 0	9. 0	0,9	1,9	2,8	3,8	4,7	5,6	6,6	7,5	8,4	9,4	10,3
3. 10	8. 50	1,0	1,9	2,9	3,9	4,9	5,8	6,8	7,8	8,7	9,7	10,7
3. 20	8. 40	1,0	2,0	3,0	4,0	5,0	6,0	7,0	8,0	9,0	10,0	11,0
3. 30	8. 30	1,0	2,1	3,1	4,1	5,2	6,2	7,2	8,3	9,3	10,3	11,4
3. 40	8. 20	1,1	2,1	3,2	4,2	5,3	6,4	7,4	8,5	9,5	10,6	11,7
3. 50	8. 10	1,1	2,2	3,3	4,3	5,4	6,5	7,6	8,7	9,8	10,9	12,0
4. 0	8. 0	1,1	2,2	3,3	4,4	5,6	6,7	7,8	8,9	10,0	11,1	12,2
4. 10	7. 50	1,1	2,3	3,4	4,5	5,7	6,8	7,9	9,1	10,2	11,3	12,5
4. 20	7. 40	1,2	2,3	3,5	4,6	5,8	6,9	8,1	9,2	10,4	11,5	12,7
4. 30	7. 30	1,2	2,3	3,5	4,7	5,9	7,0	8,2	9,4	10,5	11,7	12,9
4. 40	7. 20	1,2	2,4	3,6	4,8	5,9	7,1	8,3	9,5	10,7	11,9	13,1
4. 50	7. 10	1,2	2,4	3,6	4,8	6,0	7,2	8,4	9,6	10,8	12,0	13,2
5. 0	7. 0	1,2	2,4	3,6	4,9	6,1	7,3	8,5	9,7	10,9	12,2	13,4
5. 10	6. 50	1,2	2,5	3,7	4,9	6,1	7,4	8,6	9,8	11,0	12,3	13,5
5. 20	6. 40	1,2	2,5	3,7	4,9	6,2	7,4	8,6	9,9	11,1	12,3	13,6
5. 30	6. 30	1,2	2,5	3,7	5,0	6,2	7,4	8,7	9,9	11,2	12,4	13,7
5. 40	6. 20	1,2	2,5	3,7	5,0	6,2	7,5	8,7	10,0	11,2	12,5	13,7
5. 50	6. 10	1,2	2,5	3,7	5,0	6,2	7,5	8,7	10,0	11,2	12,5	13,7
6. 0	6. 0	1,3	2,5	3,8	5,0	6,3	7,5	8,8	10,0	11,3	12,5	13,8

When the second differences are positive, the correction is negative, and the reverse.

TABLE OF THE
EQUATION OF SECOND DIFFERENCES.

Hours after Noon or Midnight.		Second differences taken for intervals of 12 hours. 2 Minutes 0″	10″	20″	30″	40″	50″	3 Minutes 0″	10″	20″	30″	40″	50″
H.M.	H.M.	″	″	″	″	″	″	″	″	″	″	″	″
0. 0	12. 0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0. 10	11. 50	0,8	0,9	1,0	1,0	1,1	1,2	1,2	1,3	1,4	1,4	1,5	1,6
0. 20	11. 40	1,6	1,8	1,9	2,0	2,2	2,3	2,4	2,6	2,7	2,8	3,0	3,1
0. 30	11. 30	2,4	2,6	2,8	3,0	3,2	3,4	3,6	3,8	4,0	4,2	4,4	4,6
0. 40	11. 20	3,1	3,4	3,7	3,9	4,2	4,5	4,7	5,0	5,2	5,5	5,8	6,0
0. 50	11. 10	3,9	4,2	4,5	4,8	5,2	5,5	5,8	6,1	6,5	6,8	7,1	7,4
1. 0	11. 0	4,6	5,0	5,3	5,7	6,1	6,5	6,9	7,3	7,6	8,0	8,4	8,8
1. 10	10. 50	5,3	5,7	6,1	6,6	7,0	7,5	7,9	8,3	8,8	9,2	9,7	10,1
1. 20	10. 40	5,9	6,4	6,9	7,4	7,9	8,4	8,9	9,4	9,9	10,4	10,9	11,4
1. 30	10. 30	6,6	7,1	7,7	8,2	8,8	9,3	9,8	10,4	10,9	11,5	12,0	12,6
1. 40	10. 20	7,2	7,8	8,4	9,0	9,6	10,2	10,8	11,4	12,0	12,6	13,2	13,8
1. 50	10. 10	7,8	8,4	9,1	9,7	10,4	11,0	11,6	12,3	12,9	13,6	14,2	14,9
2. 0	10. 0	8,3	9,0	9,7	10,4	11,1	11,8	12,5	13,2	13,9	14,6	15,3	16,0
2. 10	9. 50	8,9	9,6	10,4	11,1	11,8	12,6	13,3	14,1	14,8	15,5	16,3	17,6
2. 20	9. 40	9,4	10,2	11,0	11,7	12,5	13,3	14,1	14,9	15,7	16,4	17,2	18,0
2. 30	9. 30	9,9	10,7	11,5	12,4	13,2	14,0	14,8	15,7	16,5	17,3	18,1	19,0
2. 40	9. 20	10,4	11,2	12,1	13,0	13,8	14,7	15,6	16,4	17,3	18,1	19,0	19,9
2. 50	9. 10	10,8	11,7	12,6	13,5	14,4	15,3	16,2	17,1	18,0	18,9	19,8	20,7
3. 0	9. 0	11,3	12,2	13,1	14,1	15,0	15,9	16,9	17,8	18,8	19,7	20,6	21,6
3. 10	8. 50	11,7	12,6	13,6	14,6	15,5	16,5	17,5	18,5	19,4	20,4	21,4	22,3
3. 20	8. 40	12,0	13,0	14,0	15,0	16,0	17,1	18,1	19,1	20,1	21,1	22,1	23,1
3. 30	8. 30	12,4	13,4	14,5	15,5	16,5	17,6	18,6	19,6	20,7	21,7	22,7	23,8
3. 40	8. 20	12,7	13,8	14,9	15,9	17,0	18,0	19,1	20,2	21,2	22,3	23,3	24,4
3. 50	8. 10	13,0	14,1	15,2	16,3	17,4	18,5	19,6	20,7	21,7	22,8	23,9	25,0
4. 0	8. 0	13,3	14,4	15,5	16,7	17,8	18,9	20,0	21,1	22,2	23,3	24,4	25,6
4. 10	7. 50	13,6	14,7	15,9	17,0	18,1	19,3	20,4	21,5	22,7	23,8	24,9	26,1
4. 20	7. 40	13,8	15,0	16,1	17,3	18,5	19,6	20,8	21,9	23,1	24,2	25,4	26,5
4. 30	7. 30	14,1	15,2	16,4	17,6	18,8	19,9	21,1	22,3	23,4	24,6	25,8	27,0
4. 40	7. 20	14,3	15,4	16,6	17,8	19,0	20,2	21,4	22,6	23,8	25,0	26,1	27,3
4. 50	7. 10	14,4	15,6	16,8	18,0	19,2	20,4	21,6	22,9	24,1	25,3	26,5	27,7
5. 0	7. 0	14,6	15,8	17,0	18,2	19,4	20,7	21,9	23,1	24,3	25,5	26,7	28,0
5. 10	6. 50	14,7	15,9	17,2	18,4	19,6	20,8	22,1	23,3	24,5	25,7	27,0	28,2
5. 20	6. 40	14,8	16,0	17,3	18,5	19,8	21,0	22,2	23,5	24,7	25,9	27,2	28,4
5. 30	6. 30	14,9	16,1	17,4	18,6	19,9	21,1	22,3	23,6	24,8	26,1	27,3	28,6
5. 40	6. 20	15,0	16,2	17,4	18,7	19,9	21,2	22,4	22,7	24,9	26,2	27,4	28,7
5. 50	6. 10	15,0	16,2	17,5	18,7	20,0	21,2	22,5	23,7	25,0	26,2	27,5	28,7
6. 0	6. 0	15,0	16,3	17,5	18,8	20,0	21,3	22,5	23,8	25,0	26,3	27,5	28,8

When the second differences are negative, the correction is positive, and the reverse.

TABLE OF THE EQUATION OF SECOND DIFFERENCES.

Hours after Noon or Midnight.		Second differences taken for intervals of 12 hours.											
		4 Minutes						5 Minutes.					
		0''	10''	20''	30''	40''	50''	0''	10''	20''	30''	40''	50''
H.M.	H.M.	''	''	''	''	''	''	''	''	''	''	''	''
0. 0	12. 0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0. 10	11. 50	1,6	1,7	1,8	1,8	1,9	2,0	2,1	2,1	2,2	2,3	2,3	2,4
0. 20	11. 40	3,2	3,4	3,5	3,6	3,8	3,9	4,1	4,2	4,3	4,5	4,6	4,7
0. 30	11. 30	4,8	5,0	5,2	5,4	5,6	5,8	6,0	6,2	6,4	6,6	6,8	7,0
0. 40	11. 20	6,3	6,6	6,8	7,1	7,3	7,6	7,9	8,1	8,4	8,7	8,9	9,2
0. 50	11. 10	7,8	8,1	8,4	8,7	9,0	9,4	9,7	10,0	10,3	10,7	11,0	11,3
1. 0	11. 0	9,2	9,5	9,9	10,3	10,7	11,1	11,5	11,8	12,2	12,6	13,0	13,4
1. 10	10. 50	10,5	11,0	11,4	11,8	12,3	12,7	13,2	13,6	14,0	14,5	14,9	15,4
1. 20	10. 40	11,9	12,3	12,8	13,3	13,8	14,3	14,8	15,3	15,8	16,3	16,8	17,3
1. 30	10. 30	13,1	13,7	14,2	14,8	15,3	15,9	16,4	17,0	17,5	18,0	18,6	19,1
1. 40	10. 20	14,4	14,9	15,5	16,1	16,7	17,3	17,9	18,5	19,1	19,7	20,3	20,9
1. 50	10. 10	15,5	16,2	16,8	17,5	18,1	18,8	19,4	20,1	20,7	21,4	22,0	22,7
2. 0	10. 0	16,7	17,4	18,1	18,8	19,4	20,1	20,8	21,5	22,2	22,9	23,6	24,3
2. 10	9. 50	17,8	18,5	19,2	20,0	20,7	21,5	22,2	22,9	23,6	24,4	25,2	25,9
2. 20	9. 40	18,8	19,6	20,4	21,1	21,9	22,7	23,5	24,3	25,1	25,8	26,6	27,4
2. 30	9. 30	19,8	20,6	21,4	22,3	23,1	23,9	24,7	25,6	26,4	27,2	28,0	28,9
2. 40	9. 20	20,7	21,6	22,5	23,3	24,2	25,1	25,9	26,8	27,7	28,5	29,4	30,2
2. 50	9. 10	21,6	22,5	23,4	24,3	25,3	26,2	27,1	28,0	28,9	29,8	30,7	31,6
3. 0	9. 0	22,5	23,4	24,4	25,3	26,3	27,2	28,1	29,1	30,0	30,9	31,9	32,8
3. 10	8. 50	23,3	24,3	25,3	26,2	27,2	28,2	29,1	30,1	31,1	32,1	33,0	34,0
3. 20	8. 40	24,1	25,1	26,1	27,1	28,1	29,1	30,1	31,1	32,1	33,1	34,1	35,1
3. 30	8. 30	24,8	25,8	26,9	27,9	28,9	30,0	31,0	32,0	33,1	34,1	35,1	36,2
3. 40	8. 20	25,5	26,5	27,6	28,6	29,7	30,8	31,8	32,9	34,0	35,0	36,1	37,1
3. 50	8. 10	26,1	27,2	28,3	29,3	30,4	31,5	32,6	33,7	34,8	35,9	37,0	38,0
4. 0	8. 0	26,7	27,8	28,9	30,0	31,1	32,2	33,3	34,4	35,6	36,7	37,8	38,9
4. 10	7. 50	27,2	28,3	29,5	30,6	31,7	32,9	34,0	35,1	36,3	37,4	38,5	39,7
4. 20	7. 40	27,7	28,8	30,0	31,1	32,3	33,5	34,6	35,8	36,9	38,1	39,2	40,4
4. 30	7. 30	28,1	29,3	30,5	31,6	32,8	34,0	35,2	36,3	37,5	38,7	39,8	41,0
4. 40	7. 20	28,5	29,7	30,9	32,1	33,3	34,5	35,6	36,8	38,0	39,2	40,4	41,6
4. 50	7. 10	28,9	30,1	31,3	32,5	33,7	34,9	36,1	37,3	38,5	39,7	40,9	42,1
5. 0	7. 0	29,2	30,4	31,6	32,8	34,0	35,2	36,5	37,7	38,9	40,1	41,3	42,5
5. 10	6. 50	29,4	30,6	31,9	33,1	34,3	35,6	36,8	38,0	39,2	40,5	41,7	42,9
5. 20	6. 40	29,6	30,9	32,1	33,3	34,6	35,8	37,0	38,3	39,5	40,7	42,0	43,2
5. 30	6. 30	29,8	31,0	32,3	33,5	34,8	36,0	37,2	38,5	39,7	41,0	42,2	43,4
5. 40	6. 20	29,9	31,2	32,4	33,6	34,9	36,1	37,4	38,6	39,9	41,1	42,4	43,6
5. 50	6. 10	30,0	31,2	32,5	33,7	35,0	36,2	37,5	38,7	40,0	41,2	42,5	43,7
6. 0	6. 0	30,0	31,3	32,5	33,8	35,0	36,3	37,5	38,8	40,0	41,3	42,5	43,8

When the second differences are negative, the correction is positive, and the reverse.

TABLE OF THE
EQUATION OF SECOND DIFFERENCES.

Hours after Noon or Midnight.		Second differences taken for intervals of 12 hours.											
		6 Minutes						M	M	M	M	M	M
		0″	10″	20″	30″	40″	50″	7	8	9	10	11	12
H. M.	H. M.	″	″	″	″	″	″	″	″	″	″	″	″
0. 0	12. 0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0	0,0
0. 10	11. 50	2,5	2,5	2,6	2,7	2,7	2,8	2,9	3,3	3,7	4,1	4,5	4,9
0. 20	11. 40	4,9	5,0	5,1	5,3	5,4	5,5	5,7	6,5	7,3	8,1	8,9	9,7
0. 30	11. 30	7,2	7,4	7,6	7,8	8,0	8,2	8,4	9,6	10,8	12,0	13,2	14,4
0. 40	11. 20	9,4	9,7	10,0	10,2	10,5	10,8	11,0	12,6	14,2	15,7	17,3	18,9
0. 50	11. 10	11,6	12,0	12,3	12,6	12,9	13,2	13,6	15,5	17,4	19,4	21,3	23,3
1. 0	11. 0	13,8	14,1	14,5	14,9	15,3	15,7	16,0	18,3	20,6	22,9	25,2	27,5
1. 10	10. 50	15,8	16,2	16,7	17,1	17,6	18,0	18,4	21,1	23,7	26,3	29,0	31,6
1. 20	10. 40	17,8	18,3	18,8	19,3	19,8	20,2	20,7	23,7	26,7	29,6	32,6	35,6
1. 30	10. 30	19,7	20,2	20,8	21,3	21,9	22,4	23,0	26,3	29,5	32,8	36,1	39,4
1. 40	10. 20	21,5	22,1	22,7	23,3	23,9	24,5	25,1	28,7	32,3	35,9	39,5	43,1
1. 50	10. 10	23,3	23,9	24,6	25,2	25,9	26,5	27,2	31,1	34,9	38,8	42,7	46,6
2. 0	10. 0	25,0	25,7	26,4	27,1	27,8	28,5	29,2	33,3	37,5	41,7	45,8	50,0
2. 10	9. 50	26,6	27,4	28,1	28,9	29,6	30,3	31,1	35,5	39,9	44,4	48,8	53,3
2. 20	9. 40	28,2	29,0	29,8	30,5	31,3	32,1	32,9	37,6	42,3	47,0	51,7	56,4
2. 30	9. 30	29,7	30,5	31,3	32,2	33,0	33,8	34,6	39,6	44,5	49,5	54,4	59,4
2. 40	9. 20	31,1	32,0	32,8	33,7	34,6	35,4	36,3	41,5	46,7	51,9	57,0	62,2
2. 50	9. 10	32,5	33,4	34,3	35,2	36,1	37,0	37,9	43,3	48,7	54,1	59,5	64,9
3. 0	9. 0	33,8	34,7	35,6	36,6	37,5	38,4	39,4	45,0	50,6	56,3	61,9	67,5
3. 10	8. 50	35,0	35,9	36,9	37,9	38,9	39,8	40,8	46,6	52,4	58,3	64,1	69,9
3. 20	8. 40	36,1	37,1	38,1	39,1	40,1	41,1	42,1	48,1	54,2	60,2	66,2	72,2
3. 30	8. 30	37,2	38,2	39,3	40,3	41,3	42,4	43,4	49,6	55,8	62,0	68,2	74,4
3. 40	8. 20	38,2	39,3	40,3	41,4	42,4	43,5	44,6	50,9	57,3	63,7	70,0	76,4
3. 50	8. 10	39,1	40,2	41,3	42,4	43,5	44,6	45,7	52,2	58,7	65,2	71,7	78,3
4. 0	8. 0	40,0	41,1	42,2	43,3	44,4	45,6	46,7	53,3	60,0	66,7	73,3	80,0
4. 10	7. 50	40,8	41,9	43,1	44,2	45,3	46,5	47,6	54,4	61,2	68,0	74,8	81,6
4. 20	7. 40	41,5	42,7	43,8	45,0	46,1	47,3	48,4	55,4	62,3	69,2	76,1	83,1
4. 30	7. 30	42,2	43,4	44,5	45,7	46,9	48,0	49,2	56,3	63,3	70,3	77,3	84,4
4. 40	7. 20	42,8	44,0	45,2	46,3	47,5	48,7	49,9	57,0	64,2	71,3	78,4	85,6
4. 50	7. 10	43,3	44,5	45,7	46,9	48,1	49,3	50,5	57,7	64,9	72,2	79,4	86,6
5. 0	7. 0	43,8	45,0	46,2	47,4	48,6	49,8	51,0	58,3	65,6	72,9	80,2	87,5
5. 10	6. 50	44,1	45,4	46,6	47,8	49,0	50,3	51,5	58,8	66,2	73,6	80,9	88,3
5. 20	6. 40	44,4	45,7	46,9	48,1	49,4	50,6	51,9	59,3	66,7	74,1	81,5	88,9
5. 30	6. 30	44,7	45,9	47,2	48,4	49,7	50,9	52,1	59,6	67,0	74,5	81,9	89,4
5. 40	6. 20	44,9	46,1	47,4	48,6	49,8	51,1	52,3	59,8	67,3	74,8	82,2	89,7
5. 50	6. 10	45,0	46,2	47,5	48,7	50,0	51,2	52,5	60,0	67,4	74,9	82,4	89,9
6. 0	6. 0	45,0	46,3	47,5	48,8	50,0	51,3	52,5	60,0	67,5	75,0	82,5	90,0

When the second differences are negative, the correction is positive, and the reverse.

TRUE APPARENT PLACES
OF
TWENTY FOUR PRINCIPAL FIXED STARS,
CORRECTED FOR PRECESSION, ABERRATION, AND NUTATION.

1823.	1. Polaris.		2. α Arietis.		3. Aldebaran.	
	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.
	H.M.S.	° ′ ″	H.M.S.	° ′ ″	H.M.S.	° ′ ″
January 0 N.	0.57.41, 5	1.37.40, 2	1.57.14, 0	67.22.28, 7	4.25.48, 4	73.51. 6, 7
10	34, 4	39, 7	13, 9	29, 1	48, 3	7, 0
20	27, 6	39, 7	13, 8	29, 6	48, 3	7, 4
30	21, 0	40, 5	13, 7	30, 2	48, 2	7, 7
February 9	14, 9	41, 8	13, 5	31, 0	48, 1	8, 0
19	9, 5	43, 5	13, 4	31, 9	47, 9	8, 4
March 1	5, 0	45, 9	13, 3	32, 9	47, 8	8, 7
11	1, 6	48, 7	13, 2	33, 8	47, 6	9, 0
21	0.56.59, 4	51, 7	13, 1	34, 7	47, 5	9, 4
31	58, 5	54, 7	13, 1	35, 4	47, 3	9, 6
April 10	58, 9	57, 8	13, 1	36, 0	47, 2	9, 8
20	0.57. 0, 6	38. 0, 8	13, 2	36, 5	47, 1	9, 9
30	3, 5	3, 4	13, 3	36, 7	47, 1	9, 9
May 10	7, 7	5, 7	13, 4	36, 7	47, 1	9, 9
20	12, 9	7, 7	13, 6	36, 4	47, 2	9, 6
30	19, 0	9, 2	13, 9	35, 8	47, 3	9, 2
June 9	25, 8	10, 2	14, 1	35, 0	47, 4	8, 8
19	33, 2	10, 6	14, 4	33, 9	47, 6	8, 1
29	41, 0	10, 5	14, 8	32, 6	47, 8	7, 4
July 9	48, 9	9, 7	15, 1	31, 1	48, 1	6, 5
19	56, 8	8, 5	15, 4	29, 5	48, 4	5, 6
29	0.58. 4, 4	6, 8	15, 8	27, 7	48, 7	4, 7
August 8	11, 7	4, 7	16, 1	25, 9	49, 0	3, 7
18	18, 3	2, 1	16, 4	24, 1	49, 3	2, 8
28	24, 1	37. 59, 1	16, 7	22, 3	49, 6	1, 9
Septemb. 7	29, 0	55, 8	16, 9	20, 6	49, 9	1, 3
17	32, 9	52, 2	17, 2	19, 0	50, 2	0, 6
27	35, 6	48, 5	17, 4	17, 5	50, 5	0, 1
October 7	37, 0	44, 5	17, 5	16, 2	50, 8	50. 59, 8
17	37, 2	40, 8	17, 6	14, 9	51, 0	59, 6
27	36, 1	37, 1	17, 7	13, 9	51, 3	59, 5
Novemb. 6	33, 7	33, 5	17, 8	13, 0	51, 5	59, 5
16	30, 2	30, 1	17, 8	12, 4	51, 7	59, 6
26	25, 7	27, 1	17, 8	11, 9	51, 8	59, 8
Decemb. 6	20, 2	24, 5	17, 8	11, 6	51, 9	51. 0, 0
16	14, 0	22, 4	17, 7	11, 5	52, 0	0, 4
26	7, 4	20, 8	17, 7	11, 6	52, 0	0, 7
31	3, 8	20, 4	17, 6	11, 7	52, 0	0, 9

TRUE PLACES OF THE PRINCIPAL FIXED STARS.

1823.	4. Capella.		5. Rigel.		6. β Tauri..	
	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.
	H.M.S.	° ′ ″	H.M.S.	° ′ ″	H.M.S.	° ′ ″
January 0 N.	5. 3.40, 4	44.11.23, 4	5. 6. 4, 0	98.24.40, 3	5.15. 8, 9	61.32.56, 7
10	40, 4	22, 1	4, 0	41, 9	8, 9	56, 4
20	40, 3	20, 9	4, 0	43, 4	8, 9	56, 1
30	40, 2	20, 0	3, 9	44, 6	8, 8	55, 9
February 9	40, 0	19, 3	3, 8	45, 6	8, 7	55, 7
19	39, 8	18, 9	3, 6	46, 4	8, 5	55, 6
March 1	39, 6	18, 8	3, 4	46, 9	8, 4	55, 7
11	39, 4	18, 9	3, 3	47, 1	8, 2	55, 9
21	39, 2	19, 4	3, 1	47, 1	8, 0	56, 1
31	39, 0	20, 1	2, 9	46, 8	7, 9	56, 4
April 10	38, 8	21, 1	2, 8	46, 2	7, 7	56, 9
20	38, 7	22, 2	2, 7	45, 4	7, 6	57, 4
30	38, 6	23, 5	2, 6	44, 4	7, 5	58, 0
May 10	38, 5	24, 9	2, 6	43, 2	7, 5	58, 5
20	38, 5	26, 3	2, 6	41, 7	7, 5	59, 0
30	38, 6	27, 8	2, 6	40, 1	7, 6	59, 5
June 9	38, 8	29, 1	2, 7	38, 4	7, 7	59, 8
19	38, 9	30, 3	2, 8	36, 5	7, 8	33. 0, 0
29	39, 2	31, 4	3, 0	34, 6	8, 0	0, 2
July 9	39, 5	32, 3	3, 2	32, 8	8, 2	0, 3
19	39, 8	33, 0	3, 4	31, 0	8, 5	0, 3
29	40, 1	33, 5	3, 7	29, 3	8, 8	0, 2
August 8	40, 5	33, 8	3, 9	27, 8	9, 1	0, 0
18	40, 9	34, 0	4, 2	26, 6	9, 4	32. 59, 7
28	41, 4	33, 9	4, 5	25, 6	9, 8	59, 4
Septemb. 7	41, 8	33, 7	4, 8	24, 9	10, 1	59, 1
17	42, 2	33, 2	5, 1	24, 6	10, 5	58, 8
27	42, 7	32, 6	5, 4	24, 6	10, 8	58, 5
October 7	43, 1	31, 9	5, 6	25, 0	11, 1	58, 1
17	43, 5	31, 0	5, 9	25, 8	11, 5	57, 8
27	43, 8	29, 9	6, 1	26, 9	11, 8	57, 5
Novemb. 6	44, 1	28, 8	6, 4	28, 2	12, 0	57, 2
16	44, 4	27, 5	6, 6	29, 8	12, 3	56, 9
26	44, 7	26, 1	6, 7	31, 5	12, 5	56, 6
Decemb. 6	44, 9	24, 6	6, 9	33, 3	12, 7	56, 3
16	45, 0	23, 3	7, 0	35, 2	12, 8	56, 0
26	45, 1	21, 9	7, 0	37, 0	12, 9	55, 6
31	45, 2	21, 2	7, 0	37, 8	12, 9	55, 4

TRUE PLACES OF THE PRINCIPAL FIXED STARS.

1823.	19. α Aquilæ.		20. α Cygni.		21. β Cephei.	
	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.
	H.M.S.	° ′ ″	H.M.S.	° ′ ″	H.M.S.	° ′ ″
January 0 N.	19.42. 8,1	81.35.31,2	20.35.22,6	45.20.45,2	21.26.16,6	20.12.40,0
10	8,2	32,7	22,6	47,9	16,2	42,5
20	8,3	34,1	22,6	50,7	16,0	45,3
30	8,5	35,6	22,6	53,6	15,9	48,3
February 9	8,7	36,9	22,7	56,4	15,9	51,5
19	8,8	38,0	22,9	59,0	16,0	54,5
March 1	9,1	38,8	23,1	21. 1,3	16,2	57,6
11	9,3	39,2	23,3	3,3	16,5	13. 0,4
21	9,6	39,4	23,6	4,7	16,9	2,8
31	9,9	39,2	23,9	5,7	17,4	4,9
April 10	10,2	38,5	24,3	6,0	17,9	6,2
20	10,4	37,5	24,6	5,8	18,6	7,0
30	10,7	36,3	25,0	5,0	19,2	7,2
May 10	11,0	34,8	25,4	3,6	19,8	6,8
20	11,3	33,0	25,7	1,8	20,6	5,7
30	11,6	31,1	26,1	20.59,5	21,2	4,2
June 9	11,8	29,0	26,4	56,8	21,8	2,1
19	12,0	26,8	26,7	53,8	22,3	12.59,5
29	12,2	24,7	26,9	50,6	22,8	56,5
July 9	12,4	22,6	27,1	47,2	23,3	53,2
19	12,5	20,6	27,3	43,8	23,6	49,6
29	12,6	18,8	27,4	40,4	23,8	46,0
August 8	12,6	17,1	27,4	37,1	24,0	42,2
18	12,6	15,7	27,4	34,0	24,0	38,4
28	12,5	14,4	27,3	31,0	23,9	34,8
Septemb. 7	12,4	13,5	27,2	28,4	23,7	31,2
17	12,3	12,7	27,0	26,1	23,4	28,0
27	12,2	12,2	26,8	24,2	23,0	25,0
October 7	12,0	11,9	26,6	22,9	22,6	22,4
17	11,8	11,9	26,3	21,8	22,1	20,3
27	11,7	12,2	26,1	21,3	21,5	18,6
Novemb. 6	11,5	12,7	25,8	21,2	20,9	17,5
16	11,4	13,4	25,6	21,7	20,3	17,0
26	11,3	14,4	25,4	22,7	19,7	17,0
Decemb. 6	11,2	15,5	25,2	24,2	19,1	17,6
16	11,2	16,8	25,0	26,0	18,6	18,8
26	11,2	18,3	24,9	28,3	18,1	20,5
31	11,2	19,1	24,9	29,5	17,9	21,5

TRUE PLACES OF THE PRINCIPAL FIXED STARS.

1823.	22. Fomalhaut.		23. α Pegasi.		24. α Andromedæ.	
	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.	A. R. *in Time.*	N. P. D.
	H.M.S.	° ′ ″	H.M.S.	° ′ ″	H.M.S.	° ′ ″
January 0 N.	22.47.51, 2	120.33.35, 0	22.55.57, 1	75.44.30, 1	23.59.15, 7	61.52.56, 3
10	51, 0	34, 6	57, 0	31, 2	15, 5	57, 3
20	51, 0	33, 9	56, 9	32, 3	15, 4	58, 4
30	50, 9	32, 9	56, 9	33, 5	15, 3	59, 8
February 9	50, 9	31, 6	56, 9	34, 7	15, 2	53. 1, 2
19	50, 9	30, 1	56, 9	35, 8	15, 2	2, 8
March 1	51, 0	28, 4	56, 9	36, 8	15, 1	4, 4
11	51, 1	26, 5	57, 0	37, 7	15, 1	5, 9
21	51, 2	24, 5	57, 1	38, 1	15, 2	7, 2
31	51, 4	22, 3	57, 3	38, 4	15, 3	8, 3
April 10	51, 6	20, 1	57, 5	38, 3	15, 4	9, 1
20	51, 9	17, 7	57, 7	37, 8	15, 6	9, 6
30	52, 2	15, 4	57, 9	37, 1	15, 8	9, 7
May 10	52, 5	13, 1	58, 2	35, 9	16, 1	9, 4
20	52, 8	10, 9	58, 5	34, 5	16, 4	8, 7
30	53, 2	8, 9	58, 8	32, 8	16, 7	7, 7
June 9	53, 5	7, 0	59, 1	30, 8	17, 1	6, 3
19	53, 9	5, 4	59, 5	28, 7	17, 4	4, 6
29	54, 2	4, 2	59, 8	26, 4	17, 7	2, 6
July 9	54, 5	3, 1	56. 0, 1	24, 0	18, 1	0, 4
19	54, 8	2, 4	0, 3	21, 7	18, 4	52. 58, 0
29	55, 0	2, 0	0, 5	19, 4	18, 7	55, 6
August 8	55, 3	2, 1	0, 8	17, 2	19, 0	53, 0
18	55, 4	2, 4	0, 9	15, 0	19, 2	50, 5
28	55, 6	3, 0	1, 0	13, 1	19, 4	48, 0
Septemb. 7	55, 7	3, 9	1, 1	11, 4	19, 5	45, 6
17	55, 7	5, 0	1, 2	9, 9	19, 7	43, 3
27	55, 7	6, 2	1, 2	8, 6	19, 7	41, 2
October 7	55, 6	7, 6	1, 1	7, 6	19, 7	39, 4
17	55, 5	8, 9	1, 1	6, 8	19, 7	37, 8
27	55, 4	10, 2	1, 0	6, 3	19, 7	36, 4
Novemb. 6	55, 3	11, 4	0, 9	6, 0	19, 6	35, 4
16	55, 2	12, 4	0, 8	6, 1	19, 5	34, 6
26	55, 1	13, 2	0, 6	6, 3	19, 4	34, 2
Decemb. 6	54, 9	13, 8	0, 5	6, 8	19, 3	34, 0
16	54, 8	14, 1	0, 4	7, 4	19, 2	34, 2
26	54, 6	14, 1	0, 3	8, 3	19, 1	34, 7
31	54, 6	14, 0	0, 3	8, 8	19, 0	35, 1

EXPLANATION AND USE

OF THE

ARTICLES

CONTAINED IN

THE ASTRONOMICAL AND NAUTICAL EPHEMERIS.

BY THE LATE DR. MASKELYNE.

It may be proper first to premise, that all the Calculations of the *Ephemeris*, except of the eclipses of Jupiter's Satellites, are made according to the apparent Time by the Meridian of the *Royal Observatory* at *Greenwich:* And the Sun's, Planets', and Moon's Places, with the Particulars depending on them in the IId, IVth, Vth, VIth, and VIIth Pages of each Month, are computed to the Instant of apparent Noon, or that of the Sun's Centre passing the Meridian of *Greenwich.*

Apparent Time, at any Place, is that deduced immediately from the Sun, whether from the Observation of his passing the Meridian, from his Altitude observed at a Distance from the Meridian, or from his observed Rising or Setting. This Time is different from that shown by Clocks and Watches well regulated at Land, which is called equated or mean Time. This will be explained when we come to treat of the Equation of Time.

The Day is here supposed, according to the Method of Astronomers, to begin at Noon, or 12 Hours later than the civil Day of the same denomination, and to be counted up to 24 Hours, or the succeeding Noon, when the next Day begins. Thus the Day of the Month and the Hour of the Day are the same in this Method as in the civil Account at Noon, and from Noon till Midnight; but from Midnight till Noon they differ; for whereas in the civil Account a fresh Day is supposed to begin at Midnight, and the Hours to begin over again, in this Method the Day is still continued beyond Midnight, and the Reckoning of the Hours is continued up to 24. Thus the Distances put down to January 10, XV Hours, belong to January 11 at Three in the Morning by civil Reckoning.

There are XII Pages for every Month. The first column of the first Page of each Month contains the Day of the Week expressed

concisely by the initial Letter or Letters: the second the Day of the Month: the third Column exhibits the Sundays and Festivals of the Church of England, and other remarkable Days: The last Column shows at Top the Moon's Phases, or the Times of New and Full Moon, and of the first and last Quarter or two Quadratures with the Sun: Beneath are contained miscellaneous Phenomena, namely, Eclipses of the Sun and Moon, and Occultations of Planets or fixed Stars not less than the "fourth" Magnitude, by the Moon, as they should happen at *Greenwich* by the Tables; the Conjunctions of the Moon with all Stars not less than the "fourth" Magnitude, which can be Occultations any where on the Globe, between the Latitudes of 60° North and 40° South: the Entrance of the Sun into the several Signs, and any other remarkable Phenomena.

The Stars are expressed by *Bayer's* Characters of Reference. The Conjunction of the Moon or a Planet with a Star is denoted by prefixing the Character of the Moon or Planet to that of the Star, the Time of the Conjunction being placed immediately before. The Case is the same with respect to the Occultation of a Star or Planet by the Moon, only this is further distinguished by the Addition of Im. or Immersion, to signify the Disappearance behind the Moon; and Em. or Emersion, to signify the Re-appearance of the same. Thus 8^d. 16^h. 22′ ☽ ϑ ♑, signifies that the Moon will be in Conjunction with the Star ϑ ♑ on the Eighth Day at 16^h. 22′, exclusive of Parallax: And 10^d. 9^h. 14′ Im. of ε ♊; 10^d. 10^h. 23′ Em. signifies that the Moon will eclipse ε ♊ on the 10th Day, the Immersion being at 9^h. 14′ and the Emersion at 10^h. 23′, apparent Time at *Greenwich.*

The Occultations set down are only those visible at *Greenwich*; the Circumstances of which will commonly not differ very widely in most Parts of the Kingdom; but in very distant Places they will differ very much, owing to the Change of the Moon's Parallax, or it may become no Occultation at all: The like may be said of Eclipses of the Sun.

An Eclipse of the Sun, or Occultation of a fixed Star by the Moon, if observed in a Place whose Latitude and Longitude are well determined, may be applied to the Correction of the Lunar Tables; but if made in a Place whose Latitude only is well known, may be applied to the Determination of the Longitude of the Place; but for this purpose an accurate Calculation must be made of the Moon's Parallaxes in Longitude and Latitude, which makes this Method of settling the Longitudes of Places, though a very accurate one, less convenient in Use for Persons not much versed in astronomical Calculations. However, this ought not to discourage Travellers or Mariners from endeavouring to make these Observations as often and as carefully as possible, when they shall happen to be at any Place whose Longitude they have Reason to think has not been well settled; since the necessary Calculations may be made at any Time afterwards by themselves, at Leisure, or referred to the Skill of Astronomers and Mathematicians.

Eclipses of the Moon are not liable to this Inconvenience; the Longitude of any Place, where the Eclipse has been observed, being deduced immediately by taking the Difference of the Time of the Observation and that set down in the *Ephemeris,* and converting it into Degrees, at the Rate of 15° to One Hour, &c. or more briefly by Table XIV. page 38 of the Tables requisite to be used with the *Ephemeris.* But as the Beginning or Ending of an Eclipse of the Moon cannot be generally observed nearer than One Minute, and sometimes Two or Three Minutes of Time, the Longitudes of Places cannot be certainly determined by this Method from a single Observation of the Beginning or End nearer than a Degree. Even this Point of Exactness will often be of great Service. If both the beginning and End of the Eclipse be observed, a greater Degree of Exactness will be attained.

The Conjunctions of the Moon with the Planets, or fixed Stars not less than "the fourth" Magnitude, which may prove Occultations in some inhabited Parts of the Globe, are evidently designed to instruct Mariners or Travellers to look out frequently for such Observations; which, if they happen to prove Occultations, and are carefully observed, will afford a certain Means of determining the Longitude of the Place of Observation.

The Two first Columns of the second Page of the Month contain the Day of the Week and Month, as before; next follow the Sun's Longitude, right Ascension in Time, Declination, and the Equation of Time with its Difference from Day to Day.

The Longitude of the Sun is made Use of in most of the succeeding Calculations of the *Ephemeris,* and may serve either to verify them, or to make other similar Calculations at a different Time of the Day: Particularly it may serve, with the Help of the Moon's Longitude and Latitude, to find the Distance of the Moon from the Sun at any Time, independent of the Distances contained in the VIIIth, IXth, Xth, and XIth Pages of the Month. To find the Sun's Longitude at any Time different from Noon, Proportion must be made according to its daily Increase: Saying, as 24^h. is to the Hour from Noon reckoned by the Meridian of *Greenwich,* so is the daily Variation of the Sun's Longitude, to a fourth Number; which added to the Sun's Longitude at the preceding Noon, gives the true Longitude at the given Time.

If the Time given be that of a Meridian different from *Greenwich,* it must be first reduced thereto, by adding or subtracting the Difference of Longitude turned into Time (at the Rate of One Hour to 15°. and One Minute of Time to 15 Minutes, or more briefly by Table XIV. Page 38, of the *Requisite Tables*) according as the Place is to the West or to the East of *Greenwich.* Example: Suppose any one should want to know the Sun's Longitude, January 19, 1767, at 4^h. 35′ being in 21°. 15′ Longitude East of *Greenwich.* The Difference of Longitude turned into Time is 1^h. 25′, which subtracted from 4^h. 35′, because the Place is East of *Greenwich,* leaves

$3^h. 10'$ for the Time reduced to the Meridian of *Greenwich*. The Sun's Longitude the preceding Noon is $9^s. 29°. 18'. 2''$, and the following Noon it is $10^s. 0°. 19'. 4''$, the Difference is $1°. 1'. 2''$, or $61'. 2''$, the daily Variation. Then say, as 24^h. is to $3^h. 10'$, so is $61'. 2''$, to $8'. 3''$, which added to $9^s. 29°. 18'. 2''$, the Sun's Longitude on the preceding Noon, gives $9^s. 29°. 26'. 5''$, the Sun's Longitude at the Time given. In like Manner any other of the following Articles is to be found by the Help of the *Ephemeris*.

The Sun's Longitude serves also to compute the Aberration of the fixed Stars and Planets.

The Sun's right Ascension in Time is useful to the practical Astronomer in regular Observatories, who adjusts his Clocks by Sidereal Time. It is also useful to him for converting apparent into sidereal Time; as suppose that of an Eclipse of Jupiter's Satellites, in order to know at what Time it may be expected to happen by his Clock: For this Purpose the Sun's right Ascension at the preceding Noon, together with the increase of right Ascension from Noon, must be added to the apparent Time of the Phenomenon set down in the *Ephemeris*.

The Sun's right Ascension in Time serves also to compute the apparent Time of a known Star passing the Meridian: Thus, subtract the Sun's right Ascension in Time at Noon from the Star's right Ascension in Time, the Remainder is the apparent Time of the Star's passing the Meridian nearly; from which the proportional Part of the daily Increase of the Sun's right Ascension for this apparent Time from Noon being subtracted, leaves the correct Time of the Star's passing the Meridian.

Hence the apparent Time may be found from an observed Altitude of a known fixed star, suppose one contained in Page 7, of the *Requisite Tables*; as will be explained hereafter.

The Sun's right Ascension in Time is also useful for computing the Time of the Moon and Planets' passing the Meridian, as will be shown under their proper Articles.

The Sun's Declination is necessary to find the Latitude, whether at Sea or Land, from the Meridian Altitude observed: it is also requisite for finding the Latitude from Two Altitudes observed with the Interval of Time measured by a Watch; it serves for computing the Sun's Azimuth, having his Altitude and the Latitude of the Place given, in order to find the Variation of the Compass; it is required, jointly with the Latitude of the Place and the Sun's horary Angle, to compute his Altitude, if neglected to be observed at the Time of taking the Moon's Distance from the Sun for finding the Longitude, being useful to facilitate the Calculation of the Effect of Refraction and Parallax upon the Distance; it is also necessary to calculate the apparent Time from an observed Altitude of the Sun at a Distance from the Meridian, the Latitude being given; or to compute the Time of the Sun's Setting or Rising; which, though a less accurate Method than the former of obtaining the Time, may

yet be useful when that cannot be had. For any of these purposes the Sun's Declination must be found to the Time given nearly, reduced to the Meridian of *Greenwich*, making Proportion according to the Daily Increase or Decrease, in like Manner as was shown with respect to the Sun's Longitude.

The Equation of Time is a Correction, which added to, or subtracted from the apparent Time (according to its Title at the Top of the Column) gives equated or mean Time, or that which should be shown by a good Clock or Watch. Apparent Time is that which takes its beginning from the Passage of the Sun's Centre over the Meridian of any Place; and had the Sun no Motion in the Ecliptic, or was his Motion reduced to the Equator or in right Ascension uniform, he would always return to the Meridian after equal Intervals of Time. But his apparent Motion in the Ecliptic continually varying, and his Motion in right Ascension being rendered further unequal on account of the Obliquity of the Ecliptic to the Equator, from these Causes it arises that the Intervals of his Return to the Meridian become unequal, and the Sun will gradually come too slow or too soon to the Meridian for an equable Motion, such as that of Clocks and Watches ought to be.

This Retardation or Acceleration of the Sun's coming to the Meridian is called the Equation of Time, and is contained in the last Column but one of Page II. and when applied according to its Title to the apparent Time, or that deduced immediately from the Sun, gives the mean or equated Time, whence the Error of a Clock or Watch may be found, and, if required, it may be corrected.

If it be proposed to convert mean Time into apparent, this is done by a contrary Process, by applying the Equation of Time to the mean Time given, with its Title or Sign changed; viz. subtracting instead of adding, and adding instead of subtracting.

The Equation of Time being set down in the *Ephemeris* for Noon at *Greenwich*, Proportion must be made according to the daily Difference, to find what it should be at any given Time reduced to the same Meridian, as in the preceding Articles. The last Column of this Page, containing the daily Differences of the Equation, is designed for this Purpose.

As often as it may be required to make any Calculations from astronomical Tables, and the Time given be apparent Time; it is necessary first to apply the Equation of Time thereto to convert it into mean Time, the Tables being disposed according to mean Motions. Thus the Articles contained in the *Ephemeris* answering to Noon were computed to 0^h. increased, or 24 Hours of the preceding Day diminished, by the Equation of Time: And the Moon's places set down for Midnight were computed to 12^h. increased or diminished by the Equation of Time.

What has been shown concerning the Equation of Time chiefly respects the Astronomer, the Mariner having nothing to do with it in computing his Longitude from the Moon's Distances from the Sun

and Stars observed at Sea with the Help of the *Ephemeris,* all the Calculations thereof being adapted to apparent Time, the same which he will obtain by the Altitudes of the Sun or Stars in the manner hereafter prescribed.

But when Time-keepers are used at Sea, the apparent Time deduced from an Altitude of the Sun must be corrected by the Equation of Time, and the mean Time found compared with that shown by the Watch; the Difference will be the Longitude in Time from the Meridian by which the Watch was set, as near as the Going of the Watch can be depended upon.

The Equation of Time is computed by taking the Difference of the Sun's true right Ascension and his mean Longitude corrected by the Equation of the Equinoxes in right Ascension, and turning it into Time at the Rate of 1′ to 15′, &c. The Equation of Time will be additive or subtractive as the Sun's true right Ascension is greater or less than his mean Longitude so corrected.

The Time of the Sun's Semidiameter passing the Meridian, page III. serves to reduce an Observation of a Transit of the preceding or subsequent Limb over the Meridian to that of the Centre, when only One was observed. It signifies a Portion of apparent Time, or even mean Time, the Difference being absolutely insensible upon so small an interval. It is found thus: Increase the Sun's Semidiameter in the ratio of the Co-sine of his Declination to the Radius, to find his Semidiameter in right Ascension, which turned into Time at the Rate of 1′ to 15′ and 1″ to 15″ gives the Time required. The Sun's Semidiameter in right Ascension is readily found by adding the Log. Co-sine of his Declination to the logistic Logarithm of his Semidiameter, the Sum is the logistic Logarithm of his Semidiameter in right Ascension, which divided by 15 gives the Time of his Semidiameter passing the Meridian. If the Clock by which the Observation is made be regulated according to the sidereal Time, this quantity must be increased in the Ratio of 365 to 366, if great precision is required. From the Time of the Sun's Semidiameter passing the Meridian may also be found the Time of its passing the horizontal or Vertical Wire of a Quadrant or Sextant, which on some Occasions may have its Use.

The Semidiameter of the Sun is necessary to reduce the observed Altitude of his upper or Lower Limb to that of the Centre; also to reduce the observed Distance of the Moon's nearest Limb from the Sun's nearest Limb to the Distance of the Centres. It is also useful to Astronomers to verify or ascertain the exactness of the Scale of their Micrometers, by Comparison with the Measure of the Sun's horizontal Diameter. This practice is particularly useful in solar Eclipses, when the Distance of the Cusps or the Versed Sine of the uneclipsed Part has been measured with the Micrometer.

The hourly Motion of the Sun is useful in computing solar and lunar Eclipses; also in correcting the assumed Longitude of the Ship, in order to find the Time from an Observation of the Distance of the Moon from the Sun, independent of the Distances contained in the *Nautical Ephemeris;* See *British Mariner's Guide,* page 49, and Table

at the end of the same, page 25. The Logarithm of the Sun's Distance is useful in the Calculation of the Places of the Planets and Comets. The Place of the Moon's Node signifies its mean Longitude, and is necessary for finding the Equation of the equinoctial Points both in Longitude and right Ascension, the Equation of the Obliquity of the Ecliptic, and the Deviations of the fixed Stars in right Ascension and Declination.

The Eclipses of Jupiter's Satellites are set down on the lower part of Page III. and to mean Time. They are well known to afford the readiest, and for general Practice the best Method of settling the Longitudes of Places at Land; and it is by their Means principally that Geography has been so much reformed since the Invention of Telescopes, and the Construction of Tables for calculating the Time of their happening; and the Position of the most distant Places determined with equal Accuracy to the nearest. It was hoped that some Means might be found of using proper Telescopes on Shipboard to observe these Eclipses; and could this be effected, it would be of great service in ascertaining the Longitude of a Ship from time to time. In my Voyage to *Barbadoes*, under the Directions of the COMMISSIONERS OF LONGITUDE, in 1763, I made a full Trial of the late Mr. *Irwin's* Marine Chair proposed for this Purpose, but could not derive any advantage from the Use of it; and, considering the great Power requisite in a Telescope for making these Observations well, and the Violence as well as Irregularities of the Motion of a Ship, I am afraid the complete Management of a Telescope on Shipboard will always remain among the Desiderata. However, I would not be understood to mean to discourage any attempt founded upon good Principles to get over this Difficulty.

The Telescopes proper for observing the Eclipses of Jupiter's Satellites, are "common" refracting Telescopes from 15 to 20 Feet, reflecting Telescopes of 18 Inches or 2 Feet focal Length, and Telescopes of Mr. *Dollond's* Construction with two Object Glasses from 5 to 10 Feet; or, which are still more convenient, those of 46 Inches focal Length, and $3\frac{3}{4}$ Inches aperture, constructed with Three Object Glasses, which are as manageable as reflecting Telescopes, and perform as much as those which he makes of 10 Feet with Two Object Glasses.

The Eclipses of Jupiter's Satellites are observed by Astronomers at Land, as well in order to provide Materials for improving the Theories and Tables of their Motions, as for the sake of comparison with the corresponding Observations which may be made by Persons in different Parts of the Globe, whereby the Longitude of such Places will be accurately ascertained. It is indeed to be lamented that Persons, who visit distant Countries, are not more diligent to multiply Observations of this Kind; for want of which, the Observations made by Astronomers in established Observatories lose half their Use, and the Improvement of Geography is retarded. But it is to be hoped that an Emulation will spring up among those who may have Opportunities of rendering so useful a Service to the Public, to incite them to watch diligently for the Occasions of observing these Eclipses carefully, par-

ticularly of the First and Second, which are most exact for the purpose. The Eclipses, carefully calculated and set down in the *Ephemeris*, will serve to advertise them and Observers in general of the Times when they should attend to these Observations. The Person, who shall be under any Meridian different from *Greenwich*, must turn his difference of Longitude into Time: See *Requisite Tables*, page 38, and add it to or subtract it from the Time of the Eclipse set down in the *Ephemeris*, according as he is to the East or West of *Greenwich*, to find the mean Time at which the Eclipse will happen at his Meridian nearly. He must further take care to regulate his Watch or Clock by mean Time, or at least to know the Difference, as well in order to apprise him of the Time to look out for the Eclipse, as for ascertaining the apparent Time exactly at which he shall observe it. Equal Altitudes of the Sun or Stars taken with an Astronomical Quadrant afford the beast Means of regulating Clocks and Watches for occasional Observations; or they may be taken with a *Hadley's* Quadrant, by reflection from a Bason of Water or Quicksilver, or from the horizon of the Sea, if the Observer has an open Prospect, and is not elevated above 5 or 600 Feet above the level of the Sea. But, if Opportunity does not admit of taking equal Altitudes, the Time may be determined from One Altitude taken in any of the Methods above-mentioned, at least Two or Three Points of the Compass distant from the Meridian, but the nearer to the East or West the better, the Latitude of the Place being known, or being found by Observations of the Meridian Altitude of the Sun or Stars made on Purpose. It will be better to take several Altitudes in order to take a mean of the Results for greater Certainty. And if one Star be observed to the East and the other to the West of the Meridian, the Time will be determined with rather more certainty. The Manner of computing the apparent Time from the Altitude of the Sun or a Star is shown by Problems VIII and IX, pages 25 and 26, of the Explanation and Use of the *Requisite Tables*.

The Observer, being in a Place whose Longitude is well known, should be settled at his Telescope Three Minutes before the expected Time of an Immersion or Emersion of the three first Satellites; and Ten Minutes before that of the fourth Satellite; but if the Longitude of the Place is very uncertain, he must begin to look out for the Eclipse proportionably sooner: Thus, if the Longitude of the Place is uncertain to 3 Degrees, answering to 12 Minutes of Time, he ought to fix himself to his Telescope 12 Minutes sooner than is mentioned above. Nevertheless, when he has observed one Eclipse of any Satellite, and thereby found the Error of the Tables, he may allow the same Correction to the Calculations of the *Ephemeris* for several Months, which will advertise him very nearly of the Time of expecting the Eclipses of the same Satellite, and dispense with his attending so long.

The Immersions signify the Instant of the Disappearance of the Satellite by entering into the Shadow of Jupiter; and the Emersions signify the first Instant of its Appearance at coming out of the same.

They generally happen when the Satellite is at some distance from the Body of Jupiter, except near the Opposition of Jupiter to the Sun, when the Satellite approaches nearer to his Body. Before the Opposition of Jupiter to the Sun, the Immersions and Emersions happen on the West Side of Jupiter, and after the Opposition on the East Side; but if an Astronomical Telescope be used, which reverses Objects, the Appearance will be directly the contrary. Before the Opposition, the Immersions only of the first Satellite are visible; and after the Opposition, the Emersions only. The same is generally the Case with respect to the second Satellite; but both the Phenomena of the same Eclipse are frequently observable in the two outer Satellites. The Immersions and Emersions, marked with an Asterisc in the *Ephemeris*, are those visible at *Greenwich.*

To know if an Eclipse will be visible in any place, find whether Jupiter be 8° above the Horizon of the Place, and the Sun as much below it. This may be done near enough by a celestial Globe: Otherwise, the Time of the Sun's Rising and Setting may be found for any Latitude, by a Table of semidiurnal Arcs contained in the popular Book called *The Mariner's Compass Rectified,* and many other Books; the Time of Jupiter's Rising and Setting may also be found from the Time of his passing the Meridian and Declination set down in the *Ephemeris*, with the Help of the same Table of semidiurnal Arcs; adding or subtracting the semidiurnal Arc answering to the same Declination of the Sun: Remembering always, that if Jupiter's Declination and the Latitude of the Place are of the same Denomination, the semidiurnal Arc will be more than six Hours, and if they are of contrary Denominations, will be less than six Hours. But it may be more easily found whether the Eclipse will be visible at *Greenwich,* or whether it should be properly marked with an Asterisc, by the Tables, Page 28—31, annexed to the *Nautical Almanac* of 1772. For this purpose the mean time, at which the eclipse is expected to happen, found according to l. 7, p. 168, must be turned into apparent time, by applying the equation of time to it with a contrary sign.

The Immersion or Emersion of any Satellite being carefully observed in any Place according to mean Time, the Longitude from *Greenwich* is found immediately by taking the Difference of the Observation from the corresponding Time shewn in the *Ephemeris,* which must be turned into Degrees, &c. by *Requisite Tables,* Page 38; and will be East or West of *Greenwich,* as the Time observed is more or less than that of the *Ephemeris.*

Example: Suppose an Emersion of the first Satellite should be observed at the *Cape of Good Hope,* April 16, 1805, at 13^h. 25′. 35″, mean Time: The Time by the *Ephemeris* being 12^h. 12′. 2″, the Difference is 1^h. 13′. 33″, whence the Longitude of the *Cape* should be 18°. 23′. 15″ East of *Greenwich,* because the Time supposed to be observed at the Cape is more than that of the *Ephemeris.*

"It is to be observed that a correspondent Observation of an Eclipse of a Satellite of Jupiter, made under a well-known Meridian, is to be preferred to the Calculations of the *Ephemeris* for comparing with an Observation made in a Meridian whose Longitude is required; but if no Corresponding Observation can be obtained, as is frequently the Case, it will be best to find what correction the Calculations of the *Ephemeris* require by the nearest Observations to the given Time that can be obtained; which correction, applied to the Calculation of the given Eclipse in the *Ephemeris*, renders it almost equivalent to an actual Observation."

The Longitudes and Latitudes of the Planets, Page IV. serve to show where to look for them in the Heavens, to enable persons less skilled to distinguish them from the fixed Stars. They also show when they are in the most important Points of their Orbits, where it is most material to observe them. Their Declinations and the apparent Times of their passing the Meridian are particularly useful to Astronomers, who are furnished with Quadrants and Transit Instruments well fixed in the Meridian, in setting their Instruments for observing their right Ascensions and Declinations, and also to those who are only furnished with a Telescope fitted with a Micrometer.

The apparent Time of a Planet's passing the Meridian may be computed thus; the Planet's Right Ascension being calculated from its Longitude and Latitude, and turned into Time, subtract the Sun's Right Ascension at Noon in Time from it, to find the Time of the Planet's passing the Meridian nearly, which call T; take the Difference of the ☉ and Planet's daily Variations in right Ascension in Time, if the Planet is progressive in right Ascension, or the Sum, if it is retrograde, which call X; then say by the Rule of proportion;

As $24^h \mp X : T :: X : e$; and $T \pm e$ will be the correct Time of the Planet's passing the Meridian. The upper Signs are to be used both to X and e, if the Planet's progressive Motion in right Ascension be greater than that of the Sun; in any other Case the lower Signs are to be made use of.

But perhaps it may be found more readily by continual Approximation, as follows: Take the proportional Part of the Difference or Sum of the ☉ and Planet's daily Motion in right Ascension, answering to the Time of the Planet's passing the Meridian, found nearly, in Proportion to 24^h, and take a further like proportional Part of this proportional Part: and again of this last, and so on as far as is necessary. The Sum of all these proportional Parts added to the Time of the Planet's passing the Meridian, found nearly, if the Planet's progressive Motion in right Ascension is greater than that of the Sun, otherwise subtracted, gives the apparent Time of the Planet's passing the Meridian.

Example: Let it be required to find the Time of the Moon's passing the Meridian, July 1, 1767.

The Sun's right Ascension in Time, July 1st, is $6^h.\ 40'.\ 25''$, and

July 2d, is 6h. 44′. 33″ by the *Ephemeris.* Therefore his daily Motion in right Ascension is 4′. 8″. The Moon's right Ascension, July 1st at Noon, by the *Ephemeris*, is 159°. 2′, answering to 10h. 36′. 8″ of Time, and July 2d is 169°. 39′, answering to 11h. 18′. 36″. The Difference is 42′. 28″ of Time, from which 4′. 8″ being subtracted, leaves 38′. 20″. Subtract 6h. 40′. 25″ the Sun's right Ascension July 1st at Noon, from 10h. 36′. 8″ the Moon's right Ascension the same Noon, the remainder 3h. 55′. 43″ is the approximate Time of the Moon's passing the Meridian. The proportional Part of 38′. 20″, answering to this, is 6′. 17″, and the proportional Part of 6′. 17″ is 9″; therefore 6′ 17″ and 9″, or 6.′ 26″ added to 3h. 55′ 43″ give 4h. 2′. 9″, the apparent Time of the Moon's passing the Meridian. In the *Ephemeris* it is 4h. 2′. It may also be computed by taking the Difference of the Moon's right Ascension at Noon and Midnight, but then half the Sun's daily variation in right Ascension must be made use of, and Proportion must be made for 12 instead of 24 Hours: and if the Moon passed the Meridian after Midnight, the Sun's right Ascension at Midnight must be used, which is a Mean between his right Ascensions on the preceding and subsequent Noon. For the Planets it will be sufficient to take the first proportional Part only.

The Days of the Oppositions, Quadratures, &c. of the Planets to the Sun, are Times at which they ought to be observed in fixed Observatories, for settling the Elements of their Orbits by a Series of several Years' Observations.

The Vth, VIth, VIIth, VIIIth, IXth, Xth, XIth Pages of each Month contain the Moon's Place, and all the Circumstances relating to her Motion and her Distances from the Sun and proper Stars, from which her Distance should be observed for finding the Longitude at Sea. The Longitude, Latitude, and Declination of the Moon, and Time of her passing the Meridian, afford the like Uses with the same Circumstances of the Planetary Motions, and many more besides. For the sake of greater Precision, the Moon's Longitude, Latitude, right Ascension, Declination, Semidiameter, Horizontal Parallax, with its proportional Logarithm, are computed Twice a Day to Noon and Midnight, and may readily be inferred to any intermediate Time with the greatest Exactness.

Example:—Let it be required to find the Moon's Longitude and Latitude, &c. July 16, 1767, at 16h. 22′. 16″.

First to find the Longitude.

The Moon's Longitude, July 16, at 12h. is 0s. 6°. 40′. 25″, and July 17, at Noon, 0s. 13°. 47′. 48″, the Difference 7°. 7′. 23″ is the Moon's Motion in 12 Hours; say then by the Rule of Proportion:

As 12h is to 4h. 22′. 16″ (the excess of 16h. 22′. 16″ above 12h) so is 7°. 7′. 23″ to 2°. 35′. 41″; but this must be corrected on account of the Moon's unequal Motion in 12 Hours, by the Table of Equation of second Difference, page 148. For this Purpose take out of the *Ephemeris* the two Longitudes of the Moon next preceding the given

Time, and the Longitudes immediately following it, and set them down in Order one after another, as follows:—

	☽'s Long. by the *Ephemeris.*	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	s. °. ′. ″	°. ′. ″	′. ″	′. ″
July 16, Noon. . . .	11. 29. 29. 34	7. 10. 51		
Midnight.	0. 6. 40. 25	7. 7. 23	3. 28	3. 36
17, Noon. . . .	0. 13. 47. 48	7. 3. 39	3. 44	
Midnight.	0. 20. 51. 27			

Take their Differences 7°. 10′. 51″, 7°. 7′. 23″, 7°. 3′. 39″; take the Differences of these Differences, or the second Differences 3′. 28″, 3′. 44″; and take their Mean which is 3′. 36″. Now look for the Equation of second Difference, answering to 4h. 22′ after Midnight, found on the Side, and 3′. 36″ at the Top, which will be found = 24″, and which, according to the Remark at the Bottom of the Table, must be added to 2°. 35′. 41″, the first proportional Part, because the Motions in 12 Hours or first Differences are decreasing, the Sum 2°. 36′. 5″ added to 0s. 6°. 40′. 25″, the Moon's Longitude at Midnight, gives 0s. 9°. 16′. 30″, the Moon's true Longitude, and is as correct as the Longitudes from which it is deduced.

N. B. If the first Differences of the Four Longitudes of the Moon taken out first increase and then decrease, or *vice versâ*, first decrease and then increase, take Half the Difference of the two second Differences for the Mean second Difference, with which take out the Equation of second Difference, and add or subtract it as the First first Difference is greater or less than the Third first Difference.

To find the Moon's Latitude.

Take out of the *Ephemeris* the two Latitudes preceding and Two following the given Time, and set them down in Order, and take their first and second Differences, and the Mean of the Two second Differences; find the proportional Part of the Middle first Difference answering to the Hours and Minutes, &c. of the given Time after Noon or Midnight; which correct in the following Manner: Entering Table of Equation of second Difference, with the Hour from Noon or Midnight on the Side, and the Mean second Difference at Top, take out the corresponding Number of seconds, which added to or subtracted from the proportional Part found above, according as the Motion in 12 Hours or first Difference is decreasing or increasing; or, more generally, according as First first Difference is greater or less than Third first Difference, gives the proportional Part corrected; which now added to, or subtracted from the Moon's Latitude at the preceding Noon or Midnight, as the Latitude in these 12 Hours is increasing or decreasing, gives the Moon's Latitude correct.

Example:—The Moon's Latitude is required, July 16, 1767, at 16h. 22'. 16".

	☽'s Lat. by the *Ephemeris.*	1st Diff.	2d Diff.	Mean of 2d Diff.
1767,	° ' "	' "	' "	' "
July 16, Noon . . .	4. 31. 10 N.			
Midnight	4. 49. 36	18. 26		
		13. 50	4. 36	4. 40
17, Noon . . .	5. 3. 26	9. 6	4. 44	
Midnight	5. 12. 32			

The Moon's Latitude July 16 at Midnight being 4°. 49'. 36" N. and the Motion in the next 12 Hours being 13'. 50" say by Proportion,

As 12^h is to 4^h. 22'. 16", so is 13'. 50" to 5'. 2": but this must be corrected by adding 32", the Equation of second Difference, answering to the Hour 4^h. 22', and the Mean second Difference, 4'. 40", because the first Differences are decreasing, or rather because the first of them 18'. 26", is greater than the last of them 9'. 6", therefore the proportional Part corrected is 5'. 2" + 32" = 5'. 34", which added to 4°. 49'. 36", gives 4°. 55'. 10" N. the Moon's Latitude correct.

Remarks on some Circumstances necessary to be attended to, in order to obtain and apply the Correction of second Differences rightly in computing the Moon's Latitude.

I. If the Moon's Latitude taken out of the *Ephemeris* for Noon and Midnight changes its Denomination from North to South or from South to North, the Sum of the Two Latitudes of contrary Denominations, where the Change happens, is to be accounted the first Difference in that Place.

II. If the Three first Differences first increase and then decrease, or *vice versâ*, first decrease and then increase, Half the Difference of the Two second Differences is to be taken for the Mean second Difference.

III. If the Series of Four Latitudes taken out should first increase and then decrease about the Moon's greatest Latitudes, take the Sum of the Two first Differences standing on each Side of the greatest Latitude for the second Difference in that Place; correct the Moon's Latitude at Noon or Midnight by the simple proportional Part first found; and to the Latitude so corrected, add always in this Case the Equation of second Difference answering to the Mean second Difference.

Before I quit this Subject of Interpolation by second Differences, I shall point out another Method, by which the same End may be obtained more readily, and with fewer Rules, by those who are well acquainted with algebraic Subtraction and Addition, and the Manner of applying the Signs in those Operations. Subtract each Latitude from the following for the first Differences, to which prefix the Sign − if the Latitudes decrease, and subtract each first Difference, thus

found, from the following one of the same Order for the second Differences. Half the Sum of the Two second Differences, standing on each Side of the Interval to be interpolated, is to be accounted the Mean second Difference; the Equation corresponding to it by the Table, is to be applied always with the contrary Sign.

These Operations are to be performed, and the Signs to be applied as in algebraic Subtraction and Addition. Note further, if the four given Latitudes change their Denomination, call the second Latitude +, and those of a contrary Denomination —.

The Moon's Declination may be found at any Hour in the same Manner as her Latitude; but as the Correction arising from second Differences will never exceed 2′½, this may be neglected on most Occasions: but if any one is desirous to obtain the Declination true to a Minute, the Correction is easily applied, as shown above.

The other Articles of Page VI. and VII. viz. the Moon's "Right Ascension," her Semidiameter, horizontal Parallax, with its proportional Logarithm, and the Distances contained in the four last Pages of the Month, may be all found correctly by even Proportion, without requiring any Allowance on Account of second Differences. The proportional Part of the Moon's Longitude, &c. for any Hour, may be found very readily by the Help of the Table of proportional Logarithms, Page 39—55 of the *Requisite Tables.*

The Moon's Longitude and Latitude are used in computing the Distances from the Sun and Stars contained in the four last Pages of the Month, as well as the Appulses to Stars pointed out in Page I. and, jointly with her Parallax and Semidiameter, are necessary for computing the Eclipses of the Sun and Moon, and the Occultations of fixed Stars and Planets by the Moon. They also facilitate the Calculation of the Longitude of any Place from an observed Eclipse of the Sun, or Occultation of a Star or Planet by the Moon: Or, if the Meridian be well known, the Parallax and Semidiameter serve to deduce the Moon's true Place in the Heavens from the Observation, which, compared with that given by the *Ephemeris,* shows the Error of the Tables at the Time. The Moon's Semidiameter and Parallax are applied in correcting almost all Observations of the Moon. The proportional Logarithms of the Moon's Parallax serve further to facilitate the Calculations of Parallaxes.

The Moon's right Ascension and Declination are useful to compute her Altitude at any Time, particularly at the Observation of her distance from the Sun or a Star, supposing it was neglected to be or could not be observed properly; which latter Case may sometimes happen in the Night, though I think but rarely; the utmost Accuracy therein not being required for the Calculations of Refraction and Parallax. See *British Mariner's Guide,* Page 57, and *Requisite Tables,* Page 24. The Moon's Declination, with her Semidiameter and Parallax, serve for finding the Latitude by the Meridian Altitude of her upper and lower Limb observed at Sea. See *British Mariner's Guide,* Page 93, and *Requisite Tables,* Page 15. The Moon's right Ascension and

Declination serve also to compute the Time from her Altitude observed at the Observation of her Distance from a Star; whence the Longitude may be inferred, tho' no Altitude of the Sun or a Star was taken for regulating the Time. See *British Mariner's Guide*, Page 61, and Mr. *Edwards's* 5th Problem annexed to the *Nautical Almanac* of 1781, Page 10.

The Distances of the Moon from Sun and fixed Stars, contained in the VIIIth, IXth, Xth, and XIth Pages of the Month, are set down to every Three Hours of apparent Time by the Meridian of *Greenwich*, and are designed to relieve the Mariner from the Necessity of a Calculation, which he might think prolix and troublesome, and to enable him, when compared with the Distance observed carefully at Sea, to infer his Longitude readily and with little Danger of Mistake to a Degree of Exactness that may be thought sufficient for most Nautical purposes. But useful and valuable as the Practice of this Method may be at present, it is not a Remark unworthy our Notice, that every future Improvement of the Lunar Tables, as well as the Instruments, will bring it nearer and nearer to Perfection.

The Moon's Distances are computed both from the Sun and proper Stars, and generally from One Object on each Side of her, to afford the Mariner a greater Number of Opportunities of Observation, and a Means of attaining a greater Degree of Exactness. The Distances from the Sun are computed between 40° and 120° of Distance. While the Moon is between the Distances of 20° and 40° from the Sun, her Distance is computed only from a Star on the contrary Side that the Sun is. When she is between the Distances of 40° and 90° from the Sun, her Distance is computed both from the Sun and from a Star on the contrary Side to the Sun; when the Moon is above 90° from the Sun her Distance is computed from Two Stars, one on each Side of her; though still her Distance is computed also from the Sun from 90° to 120°. Though the Distance of the Moon from the Sun or Star, well observed with a good Instrument, is sufficient to determine the Longitude, with the help of the *Ephemeris*, always within [¼ of] "a degree," and generally much nearer, yet it will conduce to still greater Accuracy, if the Observer takes the Distance of the Moon from Two Stars, or the Sun and a Star, or, when the Moon is between 90° and 120° distant from the Sun, from the Sun and Two Stars, if he can be so lucky as to obtain these several Observations.

The Longitude being computed from the Observations made with each Star respectively, the Mean of the Results is to be taken as probably approaching nearest to the true Longitude. In particular the Moon's Distance should be taken from Two Stars, or the Sun and a Star on each Side of her, as often as Opportunity permits; since the Mean of the Results will probably be at least as exact again as either separately, I mean as far as depends on any Imperfection of the Instruments, and unavoidable small Errors arising in the Use of them, Errors of these kinds having a natural Tendency to correct each other; for that small Error which arises from the imperfection of the Lunar

Tables will affect the Result from either Star equally. But the Error of *Mayer's* last Lunar Tables, as corrected from a Series of Dr. *Bradley's* Observations of 9 Years, by Mr. *Charles Mason* in 1778, and by Mr. Delaplace's further corrections, being those used for the *Nautical Almanacs* of 1805, and following years, probably never exceeding 30″, the Uncertainty hence arising, in the Determination of the Longitude, can scarcely ever exceed 17 Miles of Longitude, and generally will be much less.

The Distances, set down in the *Ephemeris,* afford the Observer a ready Means of knowing the Star from which the Moon's Distance is to be observed; for he has nothing to do but to set his Quadrant to the Distance computed roughly from the *Ephemeris,* neglecting the Seconds, at the apparent Time estimated nearly by the Meridian of *Greenwich,* and direct his Sight to the East or West of the Moon, according as the Distance at *Greenwich* is found in the VIIIth and IXth, or Xth and XIth Pages of the Month; and having found the Moon upon the little Speculum, let him give a Sweep with the Quadrant to the Right and Left, and he will find the Star he seeks for, if above the Horizon and the Air be clear, nearly in a Line perpendicular to the Line of the Moon's Horns or longer Axis, or, which is the same Thing, in the Line of the Moon's shorter Axis produced. The Star is always one of the brightest, so that there is little Danger of mistaking another for it, if the preceding Directions are carefully observed. The Time at *Greenwich* is estimated nearly by turning the supposed Longitude from *Greenwich* into Time, by *Requisite Tables,* Page 38, and adding it to or subtracting it from the apparent Time at the ship, as its Longitude is West or East of *Greenwich.* It will be sufficient if the distance be computed from the *Ephemeris* within 10′, or 20′, for setting the Quadrant. The principal Use of the Distances of the Moon from the Sun and fixed Stars, namely, in determining the Longitude by comparison with the corresponding Distances observed at Sea, is shown in Problem XI. Page 37 of *Requisite Tables.*

The Distances contained in the *Ephemeris* were computed strictly to Noon and Midnight, and thence interpolated for every Three Hours, according to the Method shown for computing the Moon's Latitude, Page 172-173; except that the Correction of second Differences, at the middle of the Interval to be interpolated, was taken $\frac{1}{8}$ of the Mean of the Two second Differences, and at the First and Third Quarter of the Interval was taken $\frac{3}{4}$ of the Correction just found at the Middle of the Interval; instead of consulting the Table, which would however have given the same Result. But, at the first 12 Hours, when the Distances of the Moon from a Star begin, and the last 12 Hours, when the Distances end, there being only One second Difference instead of Two second Differences on each Side to take a Mean of, this Method fails in these Cases, and therefore the following is to be substituted in its stead, being derived from Sir *Isaac Newton's* Solution of the Problem of drawing a Curve through the Extremities of any Number of given Ordinates.

From Four Distances at Noon and Midnight computed strictly, to interpolate Three Distances at the IIId, VIth, and IXth Hour of the first or last Interval.

Subtract each Distance from the following, for the first Difference, and prefix the Sign —, if the Distances decrease. Subtract each first Difference thus found from the following One of the same Order, for the second Difference: And in like manner subtract the First second Difference from the following for the third Difference; applying the Signs as in algebraic Subtraction. Denote the first or last first Difference by b; the first or last second Difference by c, accordingly as the Interpolation to be made is for the first or last 12 Hours; denote also the third Difference by d, and, a being put to signify the Distance at the Beginning of the Interval, the interpolated Distances will be as follows: —

At IIId Hour of first Interval $a + \frac{1}{4} b - \frac{3}{32} c + \frac{7}{128} d$,
At VIth Hour of first Interval $a + \frac{1}{2} b - \frac{1}{8} c + \frac{1}{16} d$,
At IXth Hour of first Interval $a + \frac{3}{4} b - \frac{3}{32} c + \frac{5}{128} d$;
Or,
At IIId Hour of last Interval $a + \frac{1}{4} b - \frac{3}{32} c - \frac{5}{128} d$,
At VIth Hour of last Interval $a + \frac{1}{2} b - \frac{1}{8} c - \frac{1}{16} d$,
At IXth Hour of last Interval $a + \frac{3}{4} b - \frac{3}{32} c - \frac{7}{128} d$.

In adapting these Formulæ to Numbers, great Care must be taken about the right Application of the Signs. Thus if b, c, or d is Negative, apply the Number expressing the Value of that Term of the Formula where it is found with a contrary Sign to that of the Formula.

Let me add in this Place, that if in filling up the first and last Intervals, a new second Difference has been supposed in arithmetical Progression with the Two given ones, in order to take a mean between it and the first or last second Difference, the Interpolation at the Middle of the Interval or VIth Hour will be had true, the same as if the above Formulæ had been used. But at the Interpolation of the first and third Quarter there will be an Error of $\frac{1}{128}$ third Difference; which will be corrected, by applying $+ \frac{1}{128} d$ or third Difference, to Number found at the first Quarter of the Interval, and $- \frac{1}{128} d$ to that found at the third Quarter of the Interval; equally the same whether it be the first or last Interval.

The Configurations of Jupiter's Satellites, Page XIIth and last, exhibit the apparent Positions of the Satellites with respect to each other, and to Jupiter, at such an Hour of the Evening or Night as they are most likely to be observed, and serve to distinguish the Satellites from one another. Jupiter is distinguished by the Mark O, and the Satellites by Points with Figures annexed, the Figure 1

signifying the first Satellite, 2 the second Satellite, &c. When the Satellite is approaching towards Jupiter, the Figure is put between Jupiter and the Point; and when the Satellite is receding from Jupiter, the Figure is put on the other Side of the Point. The Satellites are in the superior Parts of their Orbits, or furthest from the Earth, when they are marked to the right hand or West of Jupiter approaching him; or to the left hand or East of Jupiter receding from him; but are in the inferior Parts of their Orbits, or nearest to the Earth, when they are marked to the right hand or West of Jupiter receding from him, or to the left or East of Jupiter approaching him. The Cipher ○, sometimes annexed to the Figure of the Satellite towards the Margin, signifies that it is invisible on the Face of Jupiter; and the black Mark ● signifies that it is invisible, being eclipsed in Jupiter's Shadow, or behind Jupiter eclipsed by his body.

A Catalogue of Longitudes of Nine Principal fixed Stars to the beginning of 1815, and of their Latitudes to the middle of the Year: from the latest Observations.

	Longitude beg. of 1815.	Latitude middle of 1815.	Ann. incr. of Long.	Ann. var. of Latitude.
	s ° ′ ″	° ′ ″	″	″
α Arietis.	1. 5. 4. 32, 9	9. 57. 37, 4 N.	50, 275	+0, 161
Aldebaran.	2. 7. 12. 11, 9	5. 28. 45. 8 S.	50, 208	−0, 335
Pollux.	3. 20. 39. 43, 1	6. 40. 15, 9 N.	49, 500	+0, 255
Regulus.	4. 27. 15. 24, 3	0. 27. 37, 9 N.	49, 944	+0, 220
Spica Virg.	6. 21. 15. 33, 5	2. 2. 19, 7 S.	50, 083	+0, 171
Antares.	8. 7. 10. 43, 6	4. 32. 38, 6 S.	50, 118	+0, 424
α Aquilæ.	9. 29. 9. 56, 4	29. 18. 44, 2 N.	50, 793	+0, 080
Fomalhaut.	11. 1. 15. 18, 6	21. 6. 38, 6 S.	50, 593	+0, 212
α Pegasi.	11. 20. 54. 33, 1	19. 24. 44, 0 N.	50, 110	+0, 098

A Catalogue of 46 Principal Fixed Stars.

1 January, 1820.

No.	Names of Stars	A. R.	Annual Variation.	Number of Obs.	Diff. of Maskelyne's Catal.	N. P. D.	Annual Variation.
		H. M. S.	″		″	° ′ ″	″
1	γ Pegasi.	0. 3. 58, 84	+ 3, 08	100	−0, 01	75. 49. 0, 15	−20, 20
2	α Cassiop.	0. 30. 20, 99	3, 31			34. 27. 4, 08	−19, 80
3	Polaris.	0. 57. 1, 51	14, 26			1. 39. 5, 57	−19, 45
4	α Arietis.	1. 57. 3, 01	3, 35	106	−0, 08	67. 23. 34, 69	−17, 40
5	α Ceti.	2. 52. 52, 89	3, 12	55	−0, 06	86. 37. 18, 19	−14, 75
6	α Persei.	3. 11. 31, 25	4, 20			40. 47. 17, 87	−13, 50
7	Aldebaran.	4. 25. 36, 28	3, 43	152	+0, 05	73. 51. 39, 67	− 7, 95
8	Capella.	5. 3. 24, 59	4, 41	231	+0, 04	44. 11. 48, 49	− 4, 57
9	Rigel.	5. 5. 53, 56	2, 88	170	+0, 07	98. 24. 59, 85	− 4, 92
10	β Tauri.	5. 14. 55, 41	2, 78	126	−0, 03	61. 33. 16, 89	− 3, 83
11	α Orionis.	5. 45. 25, 92	3, 25	91	+0, 06	82. 38. 6, 04	− 1, 37
12	Sirius.	6. 37. 12, 90	2, 61	90	+0, 12	106. 28. 30, 67	+ 4, 36
13	Castor.	7. 23. 6, 11	3, 85	137	−0, 02	57. 43. 36, 31	+ 7, 06
14	Procyon.	7. 29. 52, 67	3, 15	151	−0, 04	84. 19. 15, 69	+ 8, 54
15	Pollux.	7. 34. 17, 47	3, 69	143	−0, 03	61. 32. 52, 45	+ 8, 00
16	α Hydræ.	9. 18. 44, 61	2, 95	65	+0, 01	97. 52. 57, 19	+15, 19
17	Regulus.	9. 58. 46, 74	3, 21	104	−0, 02	77. 9. 23, 62	+17, 33
18	α Urs. Maj.	10. 52. 31, 99	3, 83			27. 16. 46, 60	+19, 30
19	β Leonis.	11. 39. 52, 45	3, 07	66	+0, 03	74. 25. 17, 93	+20, 04
20	β Virginis.	11. 41. 19, 35	3, 12	23	−0, 20	87. 13. 14, 66	+20, 00
21	γ Urs. Maj.	11. 44. 19, 13	3, 20			35. 18. 15, 25	+20, 00
22	Spica Virginis.	13. 15. 43, 46	3, 14	79	+0, 07	100. 13. 3. 28	+18, 95
23	η Urs. Maj.	13. 40. 26, 43	2, 38			39. 47. 5, 21	+18, 20
24	Arcturus.	14. 7. 27, 44	2, 73	217	−0, 01	69. 52. 31, 89	+18, 99
25	1 } α Libræ.	14. 40. 45, 03	3, 29	30	+0, 02	105. 14. 25, 60	+15, 20
26	2 } α Libræ.	14. 40. 56, 47	+ 3, 29	32	−0, 11	105. 17. 9, 73	+15, 20
27	β Urs. Minor.	14. 51. 20, 36	− 0, 32			15. 6. 31, 83	+14, 70
28	α Cor. Bor.	15. 27. 4, 34	+ 2, 53	150	−0, 05	62. 40. 22, 78	+12, 49
29	α Serpentis.	15. 35. 24, 67	2, 94	130	−0, 07	83. 0. 1, 33	+11, 73
30	Antares.	16. 18. 22, 23	3, 66	54	+0, 09	116. 1. 16, 10	+ 8, 62
31	α Herculis.	17. 6. 26, 83	2, 73	114	0, 00	75. 23. 45, 59	+ 4, 48
32	α Ophiuchi.	17. 26. 35, 16	2, 77	131	−0, 16	77. 18. 0, 55	+ 3, 10
33	γ Draconis.	17. 52. 25, 89	1, 38			38. 29. 8, 45	+ 0, 70
34	α Lyræ.	18. 30. 50, 89	2, 03	275	+0, 03	51. 22. 39, 45	− 3, 00
35	γ } Aquilæ.	19. 37. 42, 28	2, 85	187	−0, 03	79. 49. 2. 22	− 8, 38
36	α } Aquilæ.	19. 42. 0, 14	2, 93	274	+0, 01	81. 35. 55, 39	− 9, 06
37	β } Aquilæ.	19. 46. 28, 41	2, 95	157	+0, 03	84. 2. 4, 13	− 8, 57
38	1 } α Capricorni.	20. 7. 39, 90	3, 33	66	−0, 01	103. 3. 20, 60	−10, 80
39	2 } α Capricorni.	20. 8. 3, 65	3, 33	41	+0, 07	103. 5. 37, 35	−10, 80
40	α Cygni.	20. 35. 18, 06	2, 04	195	−0, 10	45. 21. 28. 59	−12, 63
41	α } Cephei.	21. 14. 16, 71	1, 42			28. 10. 28, 25	−14, 90
42	β } Cephei.	21. 26. 17, 96	0, 81			20. 13. 40, 64	−15, 70
43	α Aquarii.	21. 56. 32, 26	3, [illegible]	[illegible]	+0, 06	91. 11. 20, 55	−17, 37
44	Fomalhaut.	22. 47. 40, 96	3, 34	88	+0, 14	120. 34. 25, [illegible]0	−19, 10
45	α Pegasi.	22. 55. 48, 24	2, 98	114	−0, 05	75. 45. 35, 96	−19, 43
46	α Andromedæ.	23. 59. 6, 36	3, 08	98	−0, 03	61. 54. 10, 31	−19, 99

In the above Catalogue 0″,31 has been applied additively to all the Stars, for the correction of the equinoctial point. This correction is still capable of improvement by continued Observation: it is not comprehended in the Differences of Dr. Maskelyne's Catalogue.

At present eight Equinoxes have been observed since the new Transit Instrument was erected.

A Second Table, for finding the Apparent Places of Twenty Four Stars;

Showing the Logarithms of the Corrections in Seconds, to be applied with the proper Signs of the respective Sines.

	Names of Stars.	Aberration. A. R. in Time, L. sin. (☉'s long. +		Aberration. N. P. D. in space, L. sin. (☉'s long. +		Solar Nutation. A. R. in Time, L. sin. (2 ☉'s long. +		Solar Nutation. N. P. D. in space, L. sin. (2 ☉'s long. +		Lunar Nutation. A. R. in Time, L. sin. (☊'s long. +		Lunar Nutation. N. P. D. in space, L. sin. (☊'s long. +	
		S. D. M.		S. D. M.		S. D. M.		S. D. M.		S. D. M.		S. D. M.	
1	γ Pegasi	8. 29. 12)	+ .1065	1. 27. 41)	+ .9646	6. 6. 48)	+ 8. 790	11. 28. 57)	+ 9. 609	6. 8. 18)	+ .0477	11. 29. 2)	+ .8556
2	α Cassiopeiæ	8. 22. 17	.3394	0. 10. 38	1. 2232	7. 2. 14	8. 894	11. 21. 56	9. 601	7. 8. 8	.1771	11. 21. 34	.8639
3	α Ceti	[illegible]. 14. 36	.1120	2. 23. 25	.8676	6. 1. 9	8. 794	10. 14. 21	9. 618	6. 1. 23	.0482	10. 8. 42	.9249
4	α Persei	[illegible]. 10. 23	.2983	11. 4. 26	1. 0569	6. 15. 0	8. 939	10. 9. 43	9. 621	6. 18. 21	.2032	10. 4. 16	.9325
5	γ Geminorum	[illegible]. 24. 3	.1443	3. 10. 7	.4068	5. 27. 25	8. 339	8. 24. 0	9. 637	5. 29. 0	.0952	8. 25. 11	.9833
6	α Hydræ	4. 13. 5	.1132	2. 17. 47	.9929	6. 2. 58	8. 770	7. 17. 13	9. 617	6. 3. 37	.0262	7. 19. 2	.9197
7	α Ursæ maj.	3. 18. 39	.4370	6. 4. 0	1. 2355	4. 24. 47	8. 969	6. 18. 19	9. 604	4. 18. 55	.2628	6. 23. 4	.8681
8	β Leonis	3. 5. 46	.0932	4. 6. 46	.9588	5. 22. 35	8. 795	6. 5. 31	9. 600	5. 20. 52	.0527	6. 7. 15	.8578
9	γ Ursæ maj.	3. 4. 38	.3311	5. 18. 37	1. 2287	4. 27. 24	8. 879	6. 4. 18	9. 600	4. 21. 57	.1667	6. 5. 52	.8555
10	η Ursæ maj.	2. 3. 24	.2977	4. 22. 11	1. 2562	4. 26. 31	8. 757	5. 2. 58	9. 607	4. 20. 44	.0456	4. 28. 28	.8820
11	1 α Libræ	1. 17. 37	.1246	1. 19. 4	.7922	6. 5. 14	8. 820	4. 17. 24	9. 617	6. 6. 26	.0768	4. 11. 41	.9170
12	2 α Libræ	1. 17. 31	.1246	1. 18. 52	.7908	6. 5. 14	8. 820	4. 17. 21	9. 616	6. 6. 27	.0771	4. 11. 33	.9186
13	α Coronæ bor.	1. 6. 0	.1681	3. 22. 46	1. 1754	5. 19. 35	8. 710	4. 5. 53	9. 614	5. 17. 10	9. 9690	4. 0. 34	.9435
14	α Serpentis	1. 4. 4	.1213	3. 8. 30	.9980	5. 27. 57	8. 768	4. 3. 51	9. 625	5. 27. 24	.0237	3. 26. 15	.9484
15	β Scorpii	0. 29. 22	.1457	1. 4. 36	.6269	5. 25. 39	8. 841	3. 29. 11	9. 628	6. 5. 22	.0972	3. 24. 33	.9559
16	α Herculis	0. 12. 31	.1425	3. 5. 36	1. 0937	5. 28. 9	8. 736	3. 12. 20	9. 636	5. 27. 42	9. 9920	3. 10. 7	.9786
17	α Ophiuchi	0. 7. 51	.1402	3. 3. 13	1. 0773	5. 29. 1	8. 742	3. 7. 45	9. 637	5. 28. 47	9. 9979	3. 6. 18	.9827
18	δ Ursæ min.	11. 21. 38	1. 3520	2. 20. 21	1. 2805	11. 20. 34	9. 585	2. 23. 8	9. 637	11. 10. 29	.9221	2. 23. 14	.9817
19	γ Aquilæ	11. 7. 33	.1317	2. 13. 9	1. 0239	6. 2. 10	8. 755	2. 7. 24	9. 631	6. 2. 10	.0165	2. 10. 37	.9662
20	β Aquilæ	11. 5. 32	.1258	2. 24. 34	.9904	6. 1. 22	8. 755	2. 5. 20	9. 630	6. 1. 34	.0246	2. 9. 45	.9638
21	1 α Capricorni	11. 0. 53	.1323	3. 29. 17	.6903	6. 3. 38	8. 748	2. 0. 17	9. 628	5. 26. 16	.0794	2. 5. 39	.9573
22	2 α Capricorni	11. 0. 28	.1319	3. 29. 32	.6912	6. 3. 39	8. 748	2. 0. 11	9. 627	5. 26. 14	.0794	2. 5. 13	.9568
23	α Cephei	10. 14. 2	.4335	1. 18. 0	1. 2975	7. 19. 28	8. 726	1. 13. 54	9. 617	8. 0. 22	.0126	1. 20. 0	.9217
24	α Aquarii	10. 3. 18	.1087	3. 2. 48	.8952	5. 29. 39	8. 788	1. 3. 7	9. 611	5. 29. 22	.0447	1. 9. 2	.9001

The Corrections of the Aberration and Lunar Nutation are taken from Zach's Tables: the Method of computing the Solar Nutation is original; but if a considerable number of Places of different Stars were computed together, it might be more convenient to take out the sines and cosines of the separate arcs, than to add the arcs together in each case, and take out the sines singly, according to the Directions of the Table. See Journ. R. I. Oct. 1820.

ERRATUM 1821, 1822, 1823, 1824.

Page III of each Month, Long. ☽'s Node, *Add 7′ throughout.*

ERRATA 1823.

Page

Ecl. July 7, *for* invisible, *read* visible.

		H. M.
Insert	Beginning of the Eclipse	17. $14\frac{1}{12}$
	Greatest Obscuration	17. $27\frac{3}{5}$
	Visible ☌	17. $28\frac{5}{12}$
	End of the Eclipse	17. $41\frac{4}{9}$
	Digits eclipsed, 0°. $24'\frac{1}{4}$ on ☉'s northern Limb.	

16	☿'s Declin.	28th,	*for*	11. 57	*read*	11. 47.
27	III. Sat.	10th,	—	4. 6. 53	—	4. 7. 53
68	α Aquilæ	18th, M.	—	86. 0. 36	—	86. 0. 3
		XV^h.	—	84. 39. 30	—	84. 39. 9
		XVIII^h.	—	83. 18. 39	—	83. 18. 29
		XXI^h.	—	81. 58. 5	—	81. 58. 1
73	Phenomena	7th,	—	☉ ecl. invis.	—	☉ ecl. vis.
76	♃'s Declin.	1st.	—	23. 58	—	22. 58
150	Arg. 5^h. 40^m	and 3′. 10″	—	22,7	—	23,7
	2. 10	3. 50	—	17,6	—	17,0
179	N. 30 Antares		—	16. 18. 22,23	—	16. 18. 23,23

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